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THE
JOURNAL

OF THE

59.06 (59.3) A

Natural History Society
of Siam.

Volume V.

Comprising 4 parts and containing 1 plate and 1 map.

- No. 1. Pages 1 to 88, issued December 21st., 1921.
Edited by Malcolm Smith and W. J. F. Williamson.
- No. 2. Pages 89 to 218, issued October 25th., 1923.
Edited by Malcolm Smith and W. J. F. Williamson.
- No. 3. Pages 219 to 397, issued September 24th., 1924.
Edited by Malcolm Smith and E. J. Godfrey.
- No. 4. Index and Title Page, issued June 20th., 1931.
Edited by A. Kerr.

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NOTE.

In the preface to the present volume, written in 1921, it was stated that in addition to an account of the Birds of South-west and Peninsular Siam one of the Mammals also would be prepared by Mr. H. C. Robinson and myself. The final part on the birds was issued in September 1924 and thereafter circumstances rendered it impossible for my late colleague and myself to collaborate on the projected accounts of the mammals, or for one or other of us to prepare it by himself.

The report on the Birds is sufficiently lengthy to form by itself a volume, which, I understand, will be closed with the issue of an index. Since the report was completed there have been a few additions to the fauna of the area dealt with, two or three birds have been separated, with new names, as distinct local races; and there have been a number of changes in the nomenclature we used—this last a change to which the names of birds, more or less all over the world, are now being subject.

One list of addenda and corrigenda has already been printed (pp. 209--218), but I do not propose to offer another as the necessary alterations should be fairly obvious to the ornithologist who keeps himself *au fait* with current literature.

Singapore, 13th November, 1930.

C. BODEN KLOSS.

EDITORIAL NOTE.

The first three numbers of this volume were published by the Natural History Society of Siam. The fourth, or index number, is published by the Siam Society, with which the Natural History Society amalgamated in 1925.

CORRECTION TO KEYS.

Laridae.

Page 47. Numbers in right-hand margin :—
for 12, 15, 11 read respectively 11, 12, 15.

Limicolae.

Page 55. Transpose *Limosa limosa melanuroides* and *Limosa lapponica novae-zelandiae*.

Campephagidae.

Page 245. Numbers in right-hand margin :—
for 6 read 4, for 5 read 6, for 4 read 5, for 3 read 9, for 19
read 12, for 12 read 15, for 15 read 13.

For other corrections see 'Addenda and Corrigenda'
pp. 209—218.

THE
JOURNAL
OF THE
Natural History Society of Siam.

Vol. V., No. 1.

Date of publication, Dec. 21st, 1921.

EDITED BY

Malcolm A. Smith and W. J. F. Williamson.

Price to Members,.....Tes. 2.50
Price to Non-Members,.....Tes. 5.00

AGENTS:—WITHERBY & CO. 326 HIGH HOLBORN, LONDON.

P R E F A C E .

Volume V. of this Journal will be devoted to the Fauna of South-west and Peninsular Siam. It will give an account, as complete as possible, of the Mammals, Birds, Reptiles and Batrachians of that region. The numbers comprising it will be issued concurrently with the usual publication of the Society, but for the sake of convenience in reference, they will be retained as a separate volume. The account of the Mammals and Birds has been undertaken by Messrs. Robinson and Kloss, that of the Reptiles and Batrachians by Dr. Malcolm Smith.

The region under survey is a long narrow strip of country running due north and south for nearly 500 miles. At its greatest breadth it is barely 100 miles across, at its narrowest it is less than 20. To the north of it lies Siam proper, to the south the Malay Peninsula. Siam, however, with its definite seasons, and annual six months of drought, has a very different climate from that of the Peninsula where the temperature and rainfall hardly vary from month to month. Each country has thus a distinctive fauna of its own, and the transitional area from one to the other occurs in the region which has been defined as South-west and Peninsular Siam.

THE EDITORS.

THE
JOURNAL
OF THE
Natural History Society of Siam.

Volume V.

Bangkok.

Number 1.

THE BIRDS OF SOUTH-WEST AND PENINSULAR SIAM,

BEING AN ACCOUNT OF THE BIRDS OF SIAM FROM THE HEAD OF THE GULF OF SIAM
TO THE MALAYAN BORDER, WITH REFERENCES TO THE RECORDED OCCURRENCES
AND A KEY TO THE INDIVIDUAL SPECIES.

By HERBERT C. ROBINSON, C.M.Z.S., M.B.O.U., Director of Museums,
Federated Malay States,

AND

CECIL BODEN KLOSS, F.Z.S., M.B.O.U., Assistant Director of Museums,
Federated Malay States.

(With a map).

INTRODUCTION

By HERBERT C. ROBINSON.

The Kingdom of Siam from a zoological point of view contains such a mixture of different faunas that, unless dealt with in the most elaborate detail, any general list of its avifauna will convey little of zoogeographical value. In the extreme south its fauna is almost exclusively Malayan. Further north, to the west of the Chao Praya river, it is identical with that of Tenasserim, while that of the N.W. and the neighbourhood of Chiengmai approximates to the dry zone of Burma and the Shan States. The extreme N. and N.E., which are least known, probably contains a certain proportion of Yunnanese birds. The central and eastern portions of the Kingdom are the only areas which contain forms that may be claimed as distinctively Siamese, and, with a few notable exceptions, these forms are not strongly differentiated. The fauna of S.E. Siam, as shown by the collections made by one of us, is, as might be expected, largely Cambodian and French Indo-Chinese. (*Ibis* 1915, pp. 718-761).

It will therefore be found that the total number of species of birds found in Siam will vastly exceed the corresponding lists for the Malay Peninsula, Burma, and other surrounding countries, and will probably be not much less than 1,200-1,300 species. Of late years much ornithological work has been done in Siam by Williamson, Gairdner, Herbert, Gyldenstolpe, Eisenhofer, Barton and ourselves, and a considerable amount of literature on the subject has been published. No exhaustive faunal and regional lists have as yet been issued, with the exception of a List of the Birds of Bangkok by Williamson 1, and a general list of the Birds of Siam by Count Nyls Gyldenstolpe 2, and we have therefore thought it well to publish a full and detailed account of the birds of S. W. and Peninsular Siam, which we have defined as the portion of Siam south of the head of the Gulf of Siam. As regards Peninsular Siam—that portion of the country south of the Isthmus of Kra or Pakchan river—we can claim that our list is almost complete: excluding whatever new forms may be found in the Nakorn range, no new additions are likely to be made other than casual migrants, small owls and frogmouths, and other nocturnal birds whose capture is always a matter of chance, and common southern Malayan birds of which actual specimens, for some reason or other, may not be in the possession of our own or other museums. For the northern portion of the area, from the Gulf of Siam to the Pakchan river, i. e., S. W. Siam, we do not claim any such completeness, though even in this section we do not think that the number of species that will ultimately be added to the list will prove large or of great importance.

Some statement may be given as to material on which this paper is founded. Since 1901 one or other, or both of us, as well as parties of the collectors attached to the F. M. S. Museums, have collected over the southern portion of the area, and the collections made have numbered several thousand skins. A considerable number of these are in the British Museum (Nat. Hist.), South Kensington, and a few at Tring, but the bulk remain with us and must outnumber very

1. Journ. Nat. Hist. Soc. Siam, vols. i and ii.

2. Ibis, 1919.

many times all other collections made in the area. We have also had the advantage from time to time of examining collections made by Mr. Williamson and Mr. Herbert and their collectors, but the number so dealt with has not been large.

A word is necessary as to the general plan of the paper. From considerations of expense and time it has not been thought necessary or desirable to list all the specimens examined of every form included by us. Only those specimens, therefore, some 1500 in number, which were collected on our last expedition from January–April 1919, are listed. These specimens were all carefully measured in the flesh, which has not been the case with previous collections. The dimensions given are in the same order as the specimens are listed in.

As our publication is intended to be exhaustive to date, it has been thought desirable to give as fully as possible all records of occurrences in the area. Synonymic and taxonomical references are as far as possible omitted. As articles on the area are few in number, but have constantly to be referred to, it has been found to be a saving of space to denote each by a capital, A, B, C, etc., after the first.

The full references of the whole series are printed at the foot of each page. We have adopted this ingenious plan from Mr. Stanley Kemp's "Catalogue of the Scientific Serial Publications in the Principal Libraries of Calcutta." (Calcutta, 1918).

In a certain number of cases where we are convinced that a form *must* occur in the area, though it has not been recorded, we have added it to our list. Such species are distinguished, apart from any context, by having no serial number attached.

It is hoped that the keys may be of use to those wishful of identifying birds from this region. There are, as a rule, so few species to each genus that it has been found simpler to combine the keys into one for each family: it must be understood that these are strictly artificial and will only work against the species in our list. It has been found undesirable to attempt to provide primary keys for the orders and families. These it is hoped will not be found necessary, it being presumed that the majority of persons into whose hands this

publication is likely to fall will have some slight knowledge of ornithology. We have as far as possible made use of trinomials throughout. In those cases in which binomials appear, it is not because we are assured that a species does not vary, but merely because we are not in a position to decide whether such is, or is not, the case. Nor are we yet prepared to subscribe to the theory that identical subspecies may occur in widely separated localities between which other forms occur. It is true that, especially in the case of certain South Indian and Malayan forms, there are cases that appear to support this theory, but diligent examination will generally disclose points of difference, even if extremely slight, which are generally constant. Similar anomalies occur among certain bats and lemurs inhabiting islands on opposite sides of the Malay Peninsula.

We have been conservative in the matter of genera and have not adopted several recent emendations, though we confess we have no logical defence for not doing it.

We have described elsewhere ¹, on admittedly slight grounds, certain new forms that have occurred to us in the writing of this paper and have, as it may appear to some people, possibly unreasonably, questioned the reality of others already described; but in all cases we have given our arguments.

It is hoped that the map accompanying this paper will prove useful, while the following short description of some of the principal collecting stations, as visited by us, may prove of interest (see also Journ. Fed. Malay States Mus. x, Part 2, 1920, pp. 66-80).

Places visited on the Present Expedition: January 28—April 28, 1919.

PULAU MOHEA OR PULAU TUPAI.

A twin island with a shallow and narrow dividing strait. The western island rocky and with tall cliffs to the south and west: the eastern island lower and more flat. Both islands heavily timbered in places. Situated on a coral bank of small extent in 20-25 fathoms, about 20 miles off the coast of Trang. Very dry, with water-courses dried up at the time of our visit, though there is said to

1. Journ. F. M. S. Mus. x, part 3, 1921, pp. 203-213.

be a waterfall from the top of the western island to the sea in wet weather. General formation, sandstone.

We obtained little of interest: a new form of dwarfed *Sciurus caniceps*, with representative races on each islet; green pigeon, *Muscadivores aenea*, *Caloenas nicobarica*; two species of sunbird; and a mangrove flycatcher; while we saw crows and sea-eagles and heard a hawk-owl. We stayed here two nights.

KOH PIPIDON.

A limestone island in Ghirbi Bay, near Puket, about ten miles from the shore, the eastern side fairly flat and covered with heavy jungle amongst which immense Aroids, 12–18 ft. high (*Colocasias*), were growing. The western side, a magnificent crag of variegated greyish limestone almost marble in parts: on this crag the vegetation was interesting but little was in flower. We noticed some large *Dracaena*, *Euphorbia quadrangularis* and masses of the huge orchid, *Stauroopsis gigas* Bentham.

We obtained little of interest—a new squirrel, a bat or two and a few common birds; and noted, but did not obtain, two species of *Collocalia* and *Hirundo badia*.

JUNK SEYLON or PUKET or TONGKA.

Three hours steam from Koh Pipidon. On the present occasion we stayed three days coaling and taking in water, which was bad and hard to obtain; but did not collect, as the island had been thoroughly worked by a party of ours the year previously. We noted vultures in numbers (*Pseudogyps bengalensis*) feeding on offal in the town, and one or two King Vultures (*Otogyps calvus*) outside the actual town.

PANG-NGA OR PUNGA.

On our way north we visited Pang-nga, at the head of the bay, and some miles up a muddy river lined with mangrove and dotted here and there with limestone rocks. The town is picturesquely situated between tall limestone cliffs, with a clear rippling stream running between, but had recently been burnt down. On its outskirts was a cool and shady Wat or Siamese temple.

On our way north we passed through the straits separating

Tongka and the mainland, only two hundred yards wide and, according to the Admiralty Sailing Directions, reported to have a bar dangerous even to small craft such as ours, drawing little more than six feet of water. On this occasion the passage proved simple and we could have easily piloted our boat out ourselves, instead of, as it turned out, wasting an unnecessary and exorbitant fee on an ancient and decrepit Chinaman who took us over the shallows.

TAKUATUNG.

Our next stop was at Takuatung, a deep and sheltered inlet, where we collected on a hilly cape forming the west side of the inlet, the eastern shore being a long sweep of dazzling white sand, edged with noble casuarinas, while further inland the shores of the inlet degenerated into mangrove swamp. We stopped a couple of days and obtained two species new to the Malay Peninsula proper, viz, *Pericrocotus peregrinus* and *Palaeornis fasciata*. Mammals were scarce and uninteresting.

TAKUAPAH.

Some miles up the coast from Takuatung is Takuapah, another deep inlet. It has three entrances, but only the northernmost is safe and practicable at all seasons, the two other having dangerous bars, especially in the S. W. monsoon. About thirty miles up the inlet and some miles up the small river, navigable to small steamers, lies the mining town of Takuapah, capital of the province of the same name which exports a considerable amount of tin.

We stopped for three days in the inlet, to the north of an island which forms what is marked as Kopah Head on the charts, and anchored next further up the inlet at Koh Rah, a small eminence surrounded by mangrove and, further inland, *Melaleuca* trees. We obtained nothing of great interest in the inlet.

KOH YAM YAI AND KOH YAM NOI.

Leaving Takuapah we spent a night in the channel between these two islands, about 2 miles in extent, marked on the chart as the "Sugar Leaves." Nothing was obtained except Myna birds, *Gracula javana*, and Imperial pigeon, *Muscadivores aenea*, though other birds exist.

DE LISLE ISLAND.

Really one of the Mergui Archipelago; a large island five or six miles square of undulating surface higher to the S. and W. We anchored about the centre of the northern coast and spent a day collecting, the most interesting bird obtained being the Stone-plover (*Esacus magnirostris*), previously obtained by Kloss in another of the Mergui group and by myself in Bintang, Rhio Archipelago; but not hitherto obtained within the limits of the Malay Peninsula. We also trapped a form of *Rattus vociferans* which we had not obtained on any of the smaller islands to the southward.

RENONG RIVER.

After a tortuous course of a few miles through narrow channels, with strong tides, which caused us some anxiety (as the pilot, whom we had brought from Penang, but had not had occasion to use hitherto, inspired us with no confidence; the few accidents that had happened to us in the last few years cruising in these little-charted waters having invariably taken place while the boat was in charge of one of these native gentry), we arrived at Renong anchorage, a small and inconvenient one, in very shallow water between a small islet and the mouth of the river which, at low tide, is reduced to a dirty ditch. A broad mud-bank was between us and the shore.

We spent three or four days at Renong river, during which time our men collected on a small patch of hilly jungle at the north of the river, but obtained nothing of great interest. In the meantime we were transacting necessary business with the Siamese Governor of the province, residing at Renong, some miles up the river. This town is of considerable importance as a supply centre for several large and prosperous tin dredging concerns—mostly Australian—which are working in the vicinity.

We had here to arrange for firewood, which was dear and difficult to obtain: for water, which was exorbitant in price and abominable in quality: and for a pilot for the Pakchan, which in its upper course is encumbered with sand banks and rocks.

On the present occasion, more by good luck than knowledge, the man whom we obtained through the Harbour Master, Renong,

conveyed us without grounding more than once or twice as far as the Amphur's headquarters of Namchuk, beyond which he professed unable to go.

VICTORIA POINT.

During our stay at Renong we visited, on two occasions, Victoria Point, about 5 miles across the estuary. Victoria Point is the southernmost station of Burma, and is, or used to be, the headquarters of an officer of the Burma Commission, but since the war has been in charge of a Sub-divisional officer. There is a small wireless station at the top of the hill, which we visited. Since the working out of the Pearl beds, and the cessation of mining at Malewon, there is little activity of any kind in the place, and hardly anything is to be obtained in the way of stores. A little Para rubber is planted in the neighbourhood, notably on Victoria Island opposite the settlement.

NAMCHUK.

We left Victoria Point at about 10 a.m., and after one or two difficulties with shoals arrived at Namchuk, which is the seat of an Amphur or district officer, at about 4.30. Here we found the local population busy tidying up the place in preparation for a visit from the Lord-Lieutenant of the province, who was expected on a tour of inspection on the morrow. The neighbourhood of Namchuk is open country, mainly ricefields and village lands, but we obtained a few interesting birds including the rare eagle, *Spizaetus nepalensis*, and the beautiful harrier, *Circus melanoleucus*.

Next day, as our pilot professed to be unable to take us further, we took the boat and prospected the river up to Tapli, distant about 10 miles, and found ample water as far as the foot of a small hill called Mamoh, though the depths were variable and there were rocks in mid-channel. We started next morning on the rising tide and reached Mamoh safely, though not without a nasty bump over a flat rock which put our hearts in our mouths, but fortunately did no damage to our lightly-scantled craft.

MAMOH.

There is a small hill here with patches of evergreen jungle, on which we collected for a few days while re-sorting our outfit and mak-

ing ready for our land journeys, as we had decided to send back the launch. We got but little at Mamoh.

TAPLI.

We accordingly moved on to Tapli, the terminus of the road across the Isthmus of Kra, where we met the Lord-Lieutenant who treated us with great courtesy. Here we found quarters in a large hard-wood house built originally for the King of Siam when travelling across the Peninsula.

We stayed at Tapli longer than we anticipated though we obtained a few species that we were anxious to possess from this area, notably the broadbill, *Serilophus lunatus*, and a specimen of the long-billed partridge, *Rhizothera longirostris*. After some difficulty we secured ten elephants, the only method of transport in this district, but we had loads for twenty, so that our men and equipment had to leave for Tasan, our next stopping place, distant about twelve miles and slightly on the eastern side of the Peninsular divide, in two detachments.

Compared with Indian and Burmese elephants, we had always been accustomed to consider the Malay elephant, as used in the north of the Federated Malay States, a poor and inefficient baggage carrier. An average animal can, however, be expected to carry a load of four to five pikuls* and do twelve to fourteen miles a day over ordinary country. The same is true of Patani and Bandon animals, though the howdahs and panniers are inconvenient for carrying light and miscellaneous loads.

The local elephants, mostly from the province of Chumpon, were inferior creatures, with cranky and ill-devised panniers. Their mahouts protested vigorously if they were expected to carry more than $1\frac{1}{2}$ –2 pikuls, and I do not think there was one that took as much as three. Their only merit was that they would do a fairly long day's march.

For the last three years a cart road has been under construction from Tapli (which is the highest navigable point on the Pakchan, for boats of moderate draught), to Chumpon on the Bangkok railway. The total length of the road is about 36 miles and the earth-

* 1 pikul = $133\frac{1}{3}$ lbs. av.

work is now complete, while the road is also metalled in parts. Except for the fact that the bridges are temporary and much below the general level of the formation, the road would even now be available for light motor cars in dry weather. For the last few months the work had been under the supervision of the Siamese Department of Ways, but it seems doubtful when the road will finally be open to traffic. The route practically follows the line of the Kra ship-canal—a project much mooted in the first half of the 19th century. Though the summit level is low, less than 300 feet, the country is very rugged, and it does not require the eye of an engineer to see what a stupendous undertaking a sea-level canal would be, rivalling even the Panama Canal, while lack of adequate water would probably render a lock system impossible. The idea, however, has long entered the limbo of forgotten and chimerical projects and is not likely ever to be renewed.

From Tapli the road follows the river to the village of Pakchan through rice fields, a distance of some $2\frac{1}{2}$ –3 miles. It then leaves cultivation and runs for some miles through dry, thorny and deciduous jungle, lacking in interest, until it reaches a narrow gorge, with a pleasant little stream purling through it, where the vegetation is more of an evergreen character. This is maintained to the summit level, about ten miles from Tapli, and on to Tasan about a mile further.

TASAN.

Tasan, which is in the province of Chumpon and outside the Monthon of Puket in which we had hitherto been working, is pleasantly situated among low hills covered with evergreen forest at the confluence of two clear-water streams, and had been made his headquarters by the Engineer-in-charge of the road, who courteously assisted us in many ways. Here, by the banks of the lesser stream, in the shade of some large trees, we established a camp which was cool and pleasant and free from intrusion. We collected many interesting species of birds, mammals and reptiles, including the rare warbler, *Tribuna*, the clouded leopard, *Felis nebulosa*, and the most northerly known specimen of the long-nosed squirrel, *Rhinosciurus*,

while we added the reptilian genus, *Tropidophorus*, a scink of semi-aquatic habits, to the fauna of the Malay Peninsula.

After exhausting the possibilities of this place we moved on to Chumpon, encountering the same difficulties about transport as we had from Tasan, but this time in an accentuated degree, as the distance to be traversed was greater and, as before, we had to use two detachments.

We ourselves and most of our men walked, and though the distance, 22 miles, was comparatively trifling, we all agreed that we had seldom undertaken a more trying march. The first few miles, through open and semi-deciduous forest in the early part of the day, was pleasant enough, but the last twelve or thirteen miles was through open country, utterly without shade, over a somewhat sandy road, in a temperature that approached, if it did not exceed, 100° F. We were never more delighted than when we saw in the distance the big iron girder bridge that carries the railway over the Chumpon river. We arrived at the Chumpon rest-house utterly exhausted.

CHUMPON.

Chumpon is a considerable town, the head-quarters of a province and the seat of a Governor. It is situated in the middle of a large plain with some low,alang-covered hills to the north and about 5-6 miles from the sea. The population in the vicinity, which is pure Siamese unmixed with Malay, appears fairly dense and is devoted to the cultivation of rice. As everywhere in Siam, a large proportion of the petty traders are Chinese or Indian, and there are a good many Chinese fishermen at the river mouth.

We remained here two or three days, sending back such of the collections, as were dry, to Kuala Lumpur in charge of one of the men who had fallen sick.

We also called on the Governor and made arrangements through him for our accommodation at Koh Lak, a sea-side place some 100 miles to the north, which was to be our next collecting station. We did no collecting at Chumpon, but through the kindness of Mr. Daniels, the Section Engineer, who was very hospitable to us, we obtained the *remains* of a hare, which registers the southernmost limit of *Lepus siamensis*.

Through the courtesy of the Governor we made an excursion by motor boat to the river mouth, which is a large fishing centre. At the time of our visit not much work was being carried on, but the methods consisted of seines of various kinds, dip-nets and fish-traps, several of widely different kinds from these used in Malaya. The rail from Chumpon to Koh Lak (now called Prachuap Kirikan) runs through fairly varied country, but in this region, comparatively near the coast, we had entirely left evergreen forest, which only exists on the higher slopes of the hill ranges forming the boundary of Siam and Lower Tenasserim. Much of the country was undulating low hills, covered with lalang and other coarse grasses, but as the time of our visit was approaching the end of the dry season, everything was much burnt up and desiccated. Elsewhere was flatter country covered also with coarse grass or large patches of scrub, amongst which a tall and uncommonly thorny bamboo was extremely prominent. Occasionally we passed isolated and precipitous limestone hills arising abruptly from the plain and which, while the line was being built, formed a most convenient source of ballast. In places there were small fields of rice and buffalo-grazing lands, but the general aspect of the country, with the exception of the district round Bangtaphan, was one of great poverty and desolation.

Tradition has it that in the early part of the 19th century one of the terrific storms, which on rare occasions visit this coast, blew down much good forest that originally grew in the district. This destruction was accompanied by fires from which the land never recovered and, owing to the denudation during wet season, has progressively deteriorated ever since. Much of the country, however, looks as if it might be at least as well adapted for stock raising as parts of tropical Australia, in which that industry has been found successful.

KOH LAK.

On arrival at Koh Lak we were met by a representative of the Governor and inducted into quarters in a pleasant little house on the beach. These we occupied for some days, but had to vacate on the rumours of the arrival of personages from Bangkok, who,

however, never eventuated. The substitute quarters, though not so comfortable or well situated, served our purpose sufficiently well. Koh Lak, or Prachuap Kirikan as it is now officially called, is a large sandy bay with rocky limestone headlands or islands connected to the shore at each end. Behind are saltings, low thorny scrub and a certain amount of mangrove beyond the bay.

The place is much used as a watering place by the princes and nobility from Bangkok and is often crowded.

We stayed here nearly a fortnight and made large additions to our collections, including some interesting squirrels, a *Lepus siamensis* and, among birds, 2 species of jacana and a large series of a little *Gerygone* on which a new species had been erected by Count Nils Glydenstolpe. Very little fishing appeared to be done in the bay, and food of all kinds was dear owing to the number of visitors, while the quality of the water was indifferent.

HAT SANUK.

After our stay at Koh Lak we decided to move a few miles into the interior to a place called Hat Sanuk, which had been visited by Count Nils Glydenstolpe and which was reported to be a good collecting ground. The usual difficulties about transport occurred, but eventually we received fourteen of the local country carts drawn by bullocks or buffaloes.

The track led at first through saltings liable to be inundated in the wet season, then through open country studded with clumps of thorny bushes and, in places, through a dry and stunted jungle. Everything was parched and dried up, and the rough track was inches deep in a fine impalpable dust that was raised in clouds by the carts, and made walking in their vicinity very disagreeable. Towards noon we reached a small village surrounded by groves of thorny bamboo, through which a pleasant little stream ran. Here we had to stop four hours as the draught cattle cannot work during the middle of the day in the hot season.

The route then led through open grassy country with scattered trees (some, of a very beautiful species of *Lagerstroemia*), and clumps of bushes, and eventually entered true jungle, through which

we passed for some miles, eventually reaching Hat Sanuk at dusk.

Our bullock-cart drivers had evidently taken us by a very circuitous route, hoping to make a two days journey. The forest in which Hat Sanuk is situated is, to those used to the Malayan equatorial jungles, of very peculiar type. On the higher ridges and dryer parts it is in the main composed of two trees only:— a stumpy holly-like tree, *Balanostreblus ilicifolia* and *Euphorbia quadrangularis*. Near the water courses there was an abundance of big trees, chiefly species of *Ficus*, but we noticed no, or hardly any, *Dipterocarpaceae*, which are the characteristic feature of virgin jungle in the dryer parts of the Malayan lowland forests. The tops of the trees were in places covered with the long trailing pseudo-bulbs and flower-spikes of the beautiful orchid, *Vanda teres*, of which thousands of blooms could have been plucked in a few minutes. Less common, but still abundant, was the scarlet *Renanthera coccinea*, and another species of the same genus with yellow, brown and white petals.

We camped for some days at Hat Sanuk near a sluggish stream of indifferent water which was rapidly drying up. Many interesting species of birds were obtained, including several new records for the country. Perhaps the most interesting was a silver pheasant, *Gennaeus n. sharpii*, of which we were unfortunate in only obtaining the female. Dry weather made stalking of any kind impossible and the pheasants were very shy.

Big game, including elephants, rhinoceros and wild cattle, as well as pig, sambar and barking deer, were abundant in the district, and game tracks ran in every direction.

After Hat Sanuk the time we could spare for field work expired, and we made the best of our way back to Kuala Lumpur, stopping a couple of days at Singora which, in its way, is one of the most beautiful places in the Malay Peninsula.

Throughout the trip, from leaving Penang on January 30th to our return to Kuala Lumpur at the end of April, we had no rain with the exception of a few showers passing through Koh Lak on our return. The heat was intense, and in the Pakchan river, where however it was mitigated by dense white fogs, which lasted sometimes as late as 8.30 a.m., it quite prostrated some of our Malay crew.

The result of our work shows that, so far as Siam is concerned, the Malayan fauna stops short at the Pakchan river, whence, at low levels northward, it is purely Indo-Burmese. What the fauna is on the high dividing range between Siam and Tenasserim, which in places reaches 5,000 feet, we are unable to say; but from a distance the range does not look heavily forested. Possibly it may contain forms identical with those of Nwalabo and Muleyit, possibly more southern forms; but everything is necessarily pure conjecture.

In Tenasserim, on the other hand, the Malayan fauna continues almost undiluted as far as Tavoy. Its greater extension on this side, it is perhaps trite to remark, is evidently connected with the persistence of evergreen forests which, again, is due to the apparently much heavier rainfall on the western than on the Siamese side.

OTHER LOCALITIES.

In the various papers on collections made by us in this region, references to which will be found in the bibliography, brief accounts will be found of the various collecting stations, which are not specifically mentioned in the proceeding pages. We do not think it necessary to repeat these accounts.

GALLIFORMES.

GAME BIRDS.

1	{	With three toes only	...	...	...	2
		With four toes	...	...	...	3
2	{	Breast barred across...	<i>Turnix pugnax plumbipes.</i>			
		Breast uniform in centre	...	<i>Turnix tanki blanfordi.</i>		
3	{	Large birds, wing 13 inches or over	...	...	...	4
		Medium sized birds, wing 12-18 inches	...	...	...	5
		Small birds, wing 8 inches or less	...	...	...	9
4	{	Crested; upper tail-coverts forming a train				
		exceeding the tail feathers in length	<i>Pavo muticus.</i>			
		Not crested; tail coverts normal	...	<i>Argusianus argus.</i>		
5	{	With metallic ocelli in the plumage	...	...	...	6
		With no metallic ocelli	...	...	...	7
6	{	Greyer, with no metallic sheen on crest	<i>Polyplectron bicalcaratum.</i>			
		Browner, with metallic sheen on crest	<i>Polyplectron malaccensis.</i>			
7	{	Head uncrested	...	<i>Gallus ferrugineus ferrugineus.</i>		
		Head crested	...	...	...	8
8	{	Without wattles	...	<i>Gennaeus lineatus sharpei.</i>		
		With wattles	...	...	<i>Lophura rufa.</i>	
9	{	Crested	...	...	<i>Rollulus rouloul.</i>	
		No crest	...	...	...	10
10	{	Legs of the male armed with a spur	...	...	...	11
		Legs of the male spurless	...	...	...	13
11	{	Hind toe with a claw	...	...	...	12
		Hind toe with a small nail only	<i>Caloperdix oculea.</i>			
12	{	Throat rufous	...	...	<i>Rhizothera longirostris.</i>	
		Throat white	...	...	<i>Francolinus pintadeanus.</i>	
13	{	Tail with 14 feathers, exceeding the tail coverts	...	...	...	14
		Tail with 8 feathers, concealed by the coverts	<i>Excalfactoria chinensis.</i>			
14	{	With the patch of silky feathers beneath the wing, white				
		With the patch of silky feathers beneath the wing, grey	<i>Arboricola brunneipectus.</i>			
15	{	With marked chestnut neck-patch and				
		black post-auricular patch	...	<i>Tropidoperdix charltoni.</i>		
		With no marked chestnut neck-patch				
		and black auricular patch	...	<i>Tropidoperdix chloropus.</i>		

1. *Francolinus pintadeanus* (Scop.).

Tetrao pintadeanus, Scop., Del. Flor. et Faun. Insubr. ii, 1786, p. 93 (Bourbon); Oberholser, Proc. Biol. Soc. Washington, 32, 1919, p. 21.

Francolinus chinensis, G., p. 151 (Ratburi and Petchaburi).

The above citation by Gairdner, without any details of exact locality of specimens obtained, is the only authority for the occurrence of the Francolin within the limits now dealt with. In Tenasserim it only occurs in the extreme north, but is apparently not uncommon near Bangkok, though whether the bird is really wild there is strongly queried.*

This is the species known hitherto as *Francolinus chinensis* — a name which Oberholser has shown to be untenable.

2. *Rhizothera longirostris* (Temm.).

Perdix longirostris, Temm., Fig. et Gall. iii, 1815, pp. 323, 721 (Sumatra).

Rhizothera longirostris, Inglis, Journ. Nat. Hist. Soc. Bombay, xxvi, 1918, p. 291 (Bokpyin, S. Tenasserim); M.1, p. 35 (Patiyu).

♀. Tapli, Pakchan Estuary, Peninsular Siam. 9 March, 1919. [No. 4528].

"Iris chocolate; bill black; feet pale whitish yellow."

Total length 370; wing 195; tail 85; tarsus 54; bill from gape 33 mm.

This bird was shot in dry bamboo jungle and is the second record for the kingdom of Siam, though it is doubtless common in Patani. It agrees exactly with birds of the same sex from Selangor and Pahang. The northernmost record is the specimen recorded above from S. Tenasserim.

3. *Tropicoperdix charltoni* (Eyton).

Perdix charltonii, Eyton, Ann. and Mag. Nat. Hist. xvi, 1845, p. 230 (Malacca).

*We are now of opinion that Williamson's entry of this species in his "Preliminary List of the Birds of Bangkok" was incorrect, and that the bird does not occur in the neighbourhood of Bangkok in a really wild state. *Vide* Vol. i, pp. 47 and 120 of this Journal.—Eds.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919.

(second part).

M.1. Baker, Journ. N.H. Soc. Siam, iv, 1920. (third part).

Arboricola charltoni, H., pp. 15, 86 (Perlis and Bandon).

Tropicoperdix charltoni, M. I., p. 35 (Patiyu).

2 ♂. Ban Kok Klap, Bandon, Peninsular Siam. June, July, 1913.

"Iris dark hazel; bill blackish, yellowish green at tip of lower mandible, reddish at base; orbital skin reddish orange; tarsi and claws waxy yellow."

The species was common in dry jungle at the above locality. Common in north and central Perak.

4. *Tropicoperdix chloropus* Blyth.

Tropicoperdix chloropus, Blyth, Journ. Asiatic Soc. Bengal, xxxviii, 1859, p. 415 (Tenasserim).

Arboricola chloropus, A., p. 444; G., p. 151 (Ratburi & Petchaburi).

2 ♂, ♀. Hat Sanuk, nr. Koh Lak, S. W. Siam. 16-19 April, 1919. [Nos. 5338, 5407, 5408].

"Iris brown; orbital space dull maroon; bill sage green distally, dull red basally; feet and claws clear sage green".

Total length ♂, 252, 285; ♀, 265; wing ♂, 152, 153; ♀, 146 (worn); tail ♂, 80, 75; ♀, 68; tarsus ♂, 33, 40; ♀, 38; bill from gape ♂, 21, 22; ♀, 20 mm.

Shot by our Dyaks in dry jungle: these specimens constitute a southerly record for the species.

5. *Caloperdix oclea oclea* (Temm.).

Perdix oclea, Temm., Fig. et Gall. iii, 1815, pp. 408, 732 (India: here restricted to central parts of Malay Peninsula).

Caloperdix oclea, A., p. 449 (Bankasoon); C. ii, p. 329; F., p. 671 (Trang); H., p. 87 (Bandon); G., p. 151 (Ratburi and Petchaburi); Hume, Stray Feathers, ix, 1880, p. 121 (Takuapa).

Caloperdix oclea oclea, M. I., p. 35 (Patiyu).

We did not on this occasion obtain this partridge in Peninsular Siam, though we saw the remains of recently trapped specimens at Tasan. It is common in Trang and Bandon in bamboo and secondary jungle and still more so in the state of Perlis on the international boundary. In the Federated Malay States it is extremely rare and only known from high elevations.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.



Arboricola brunneipectus brunneipectus Tickell.

Arboricola brunneipectus, Tickell, Blyth, Journ. Asiat. Soc. Bengal, xxiv, 1855, p. 276 (Tenasserim Mountains); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 32 (Sai Yoke, W. Siam).

The specimen recorded by Mr. Williamson comes from a locality so near our northern boundary that the species will almost certainly be found, sooner or later, within our area.

6. Rollulus roulroul (Scop.).

Phasianus roulroul, Scop., Del Flor. et Faun. Insubr. ii, 1786, p. 93 (Malacca).

Rollulus roulroul, A., p. 448 (Bankasoon, etc.); C ii. p. 330; H., p. 87 (Bandon); G., p. 151 (Ratburi and Petchaburi); M. I, p. 34 (Tung Song).

♀. Tang Pran, Takuatung, W. Coast Siam. 14 February, 1919. [No. 3987].

♀. Tasan, Pakchan Estuary, Peninsular Siam. 16 March, 1919. [No. 4622].

"Iris hazel; bill black; eyelid carmine; feet coral; post-orbital patch lake".

Total length 260, 277; wing 133, 132; tail 64, 64; tarsus 39.5, 42.5; bill from gape 23, 21 mm.

Though very common indeed in the south of the Peninsula, this wood partridge rapidly grows rarer in more northern latitudes: it is strictly confined to dense evergreen forests and has a wide range in altitude.

7. Excalfactoria chinensis chinensis (Linn.).

Tetrao chinensis, Linn., Syst. Nat. i, p. 277 (1766).

Excalfactoria chinensis, A., p. 447 (Pakchan, etc.); C.ii, p. 334; D., p. 77 (Jalor, Patani).

Excalfactoria chinensis chinensis, M. I, p. 34 (Patiyu).

Common throughout the area in suitable localities, especially between Patani and Singora, though there are very few records.

8. Lophura rufa (Raffles).

Phasianus rufus, Raffles, Trans. Linn. Soc. xiii, 1822, p. 321 (Sumatra).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Phasianus castaneus, Gray in Griffith's Cuv. Anim. K., iii, 1829, p. 25.

Euplocamus vieilloti, A., p. 431 (Pakchan); B, p. 160 (Junk Seylon); C.ii, p. 320.

Lophura rufa, L., p. 89 (Ghirbi); M 1, p. 34 (Patiyu).

♀ ad. (capt.). Tasan, Chumpon, Peninsular Siam. 7 March, 1919. [No. 4469].

"Iris red, orbits smalt; bill bluish horn, lower mandible yellowish; feet coral pink".

Total length 540; wing 265; tail 220; tarsus 91; bill from gape 48 mm.

This species was said to be common in the heavily wooded area near Tasan, though we never came across it ourselves. Our specimen was presented by Mr. L. Giacone, of the Siamese Department of Ways, who had several females in captivity; southwards it is not uncommon in Perlis, but in the Federated Malay States and further south it is very rarely met with.

In adult males from Perlis and Ghirbi the flank shaft-stripes are pure white: in a half grown male from the former locality they are deep buff, becoming white anteriorly.

9. *Gennaesus lineatus sharpii* Oates.

Gennaesus sharpii, Oates, Manual Game Birds, i, 1898, p. 357 (Hills between Burma and Siam); Ibis, 1903, p. 101.

Gennaesus andersoni, Ogilvie Grant (nec. Elliot), Cat. Birds Brit. Mus. xxii, p. 306 (1893).

Gennaesus lineatus sharpii, Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxiii, 1915, p. 678; *id. op. cit.*, xxv, 1918, p. 336 (Raheng: Korat).

Gennaesus lineatus lineatus, L., p. 158 (Hat Sanuk).

Gennaesus sp.? *sharpii*, G., p. 151 (Ratburi and Petchaburi).

♀ ad. Hat Sanuk, nr. Koh Lak, S. W. Siam. 19 April, 1919. [No. 5409].

"Iris rich ochreous brown; bill greyish horn, greenish at base of lower mandible; feet and orbits crimson, soles yellow-grey."

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Total length 565 ; wing 236 ; tail 228 ; tarsus 68 ; bill from gape 33 mm.

We think that there can be but little doubt that this pheasant is referable to the above race, which has an extensive range down the hill-ranges between Burma and Siam. Our specimen agrees closely with those described and identified by Ogilvie Grant as *G. andersoni*, which subsequently formed part of the material on which the present race was founded by Oates. Gyldenstolpe obtained no females, while owing to dry weather we were unable to obtain a series, as the birds were so wild as to be unapproachable. A scapular feather picked up in the track was pure white, with very narrow lineated black bars parallel to the edge of the feather.

The undersurface of our bird is brownish black, with a broad white shaft-stripe and a broad subterminal V-shaped white bar on each feather : there is no trace of rufous on the mantle which, with the nape, has a narrow white shaft and a broader white V-shaped band on each feather, edged posteriorly with blackish.

10. *Gallus ferrugineus ferrugineus* (Gm.).

Tetrao ferrugineus, Gm., Syst. Nat. i, pt. 2, 1788, p. 761 ("China").

Gallus ferrugineus, A., pp. 442, 521 (Pakchan) ; B., p. 80 (Puket) ;

G., p. 151 (Ratbari and Petchaburi).

Gallus gallus, E., p. 122 (Patani) ; H., p. 57 (Bandon) ; L., p. 157

(Hat Sanuk) ; L., p. 89 (Junk Seylon) ; K., p. 51 (Koh Lak).

Gallus bankiva, Selater, F., p. 672 (Trang).

Gallus bankiva bankiva, Stuart Baker, Journ. Nat. Hist. Soc.

Bombay, xxv, 1917, p. 18.

Gallus ferrugineus ferrugineus, Robinson and Kloss, Records Indian

Mus. xix, 1920, p. 14 ; Kloss, *tom. cit.*, p. 151.

♂ 5 ♀. Tasan, Chumpon, Peninsular Siam. 13 and 19 March, 1919. [Nos. 4563-5, 4571, 4588, 4678,9 ; 4687-91].

♀, pull. Koh Lak, S. W. Siam. 2 and 4 April, 1919. [Nos. 5004, 5021].

"*Males*. Iris orange ; bill pinkish at base, blackish horn on culmen, etc. ; feet lead ; lappets and comb pinkish red."

"*Females*. Iris dull orange ; bill greyish horn ; feet lead-grey."

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

Males. Total length 670, 542, 532, 630, 675, 504, 480; wing 228, 224, 222, 223, 237, 226, 220; tail 337, 243, 305, 304, 343, 180, 175; tarsus 73, 70, 79, 73, 75, 76, 70; bill from gape 31, 32, 34, 30, 28, 30, 27 mm.

Females. Total length 462, 438, 403, 440, 435, 468; wing 206, 192, 195, 196, 192, 220; tail 160, 148, 148, 145, 140, 158; tarsus 57, 63, 56, 60, 62, 64; bill from gape 26, 26, 25, 26, 28, 27 mm.

Common throughout the area dealt with, in the usual situations at the edge of cultivation and in secondary jungle. Especially numerous at Tasan, where at the time of our visit they were breeding, the clutches being of five to seven eggs.

11. *Polyplectron bicalcaratum* (Linn.).

Pavo bicalcaratus, Linn., Syst. Nat. i, 1766, p. 268 (China).

Polyplectron tibetanum, A., pp. 432, 521 (Nwalabo).

Polyplectron chinquis, Ogilvie Grant, Cat. Birds Brit. Mus. xxii, 1893, p. 357 (Mergui and Nwalabo); G., p. 151 (Ratburi and Petchaburi).

Polyplectron bicalcaratum, Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxiv, 1916, p. 209.

Polyplectron malaccensis, I., p. 158 (Koon Tan).

Polyplectron bicalcaratum chinquis, M.I., p. 33 (Patiyu).

The only definite records for our area are those of Gairdner and Stuart Baker, *loc. cit. supra*. Gyldenstolpe's ♀ from Koon Tan, N. Siam, referred to *P. malaccensis*, undoubtedly belongs here, as he specially mentions the outer tail-feathers as having ocelli on both webs.

12. *Polyplectron malaccense* (Scop.).

Phasianus malaccensis, Scop., Del. Flor. et Faun. Insubr. ii, 1786, p. 93 (Malacca).

Polyplectron bicalcaratum, A., p. 434 (Mergui, Hills of South Tenasserim?) B., p. 80 (Puket).

Polyplectron malaccensis, Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxiv, 1916, p. 221 (South Tenasserim).

Though it is probable that the Peacock Pheasant is quite common in Patani, the only definite records are those of Müller and Stuart Baker given above.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1893.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

13. *Argusianus argus argus* (Linn.).

Phasianus argus Linn., Syst. Nat. i, 1766, p. 272 (Tartaria).

Argusianus argus, Hartert, Nov. Zool. ix, 1902, p. 538 (type locality fixed as Malacca); C.ii, p. 313; D., p. 78 (Patani); E., p. 123 (Rhaman); H., p. 87 (Bandon); Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxiv, 1916 p. 202; I, p. 158 (Koh Lak). *Argus giganteus*, A., p. 427 (Pakechan).

Probably common in suitable localities in southern and south-western Siam, wherever there is hilly country covered with ever-green forest.

14. *Pavo muticus* Linn.

Pavo muticus, Linn., Syst. Nat. i, 1766, p. 268 (Japan); Hartert, Nov. Zool. ix, 1902, p. 538 (type locality designated as Java); A., p. 425 (Pakechan); C.ii, p. 312; E., p. 123 (Patani); F., p. 672 (Trang); H., p. 87 (Bandon); G., p. 151 (Ratturi and Petchaburi); L., p. 89 (Ghirbi).

In suitable county, i. e., in the scrub along river courses and at the edges of rice fields, Peafowl are spread throughout Peninsular and Lower Siam. They are usually in full feather in January or February, while the trains are completely shed in June and July.

15 *Turnix pugnax plumbipes* (Hodgs.).

Hemipodius plumbipes, Hodgs., Bengal Sporting Mag. 1837, p. 346 (Nipal).

Turnix plumbipes, A., p. 450 (Bankasoon); B., p. 81; C.ii, p. 337.

Turnix taigoor, D., p. 79 (Patelung & Patani States); E., p. 122 (Patani); H., p. 140 (Koh Pennan & Koh Samui).

Turnix pugnax plumbipes, Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxiii, 1914, p. 395; L., p. 89 (Ghirbi & Puket).

Our series is not large and is deficient in females, but males from the islands in the Bandon Bight can be matched by others from the south of Pahang.

16. *Turnix tanki blanfordi* Blyth.

Turnix blanfordi, Blyth, Journ. Asiat. Soc. Bengal, xxxii, 1863, p. 80 (Pegu).

Turnix maculosus, A., p. 452 (Pakechan & Bankasoon); C.ii, p. 335.

Turnix tanki blanfordi, Stuart Baker, Journ. Nat. Hist. Soc. Bombay, xxxii, 1915, p. 601.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Tasan, Chumpon, Peninsular Siam. 23 March, 1919.
[No. 4796].

2 ♂, ♂ imm. Koh Lak (Prachuap-kirikan), S. W. Siam.
5 April, 1919. [Nos. 5078, 9].

"Iris white; bill dark horn, yellow on tomia and basal half of lower mandible; feet yellow, toes darker".

Total length 161, 158, 165; wing 80, 90, 88; tail 33, 30, 34;
tarsus 23, 23, 25; bill from gape 18, 17, 17 mm.

Tasan and the Pakchan estuary represent the southernmost limit of this Quail; we found it common in grass-lands at Tasan and Koh Lak and between that place and Hat Sanuk.

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|--|---|
| A. Hume & Davison, <i>Stray Feathers</i> , vi, 1878. | E. O. Grant, <i>Fasciuli Malayenses</i> , iii (Birds), 1905. |
| B. Müller, <i>Die Ornith. der Insel Salanga</i> , 1882. | F. Robinson and Kloss, <i>Ibis</i> , 1910-11. |
| C. Oates, <i>Birds Brit. Burmah</i> , Vols. i & ii, 1883. | G. Gairdner, <i>Journ. N. H. Soc. Siam</i> , i, 1915. |
| D. Bonholc, <i>P. Z. S.</i> 1901, Vol. i. | H. Robinson, <i>Journ. F. M. S. Museums</i> , v, 1915. |

COLUMBIFORMES.

PIGEONS.

1	{ Large birds, wing more than 8 inches	2
	{ Smaller birds, wing less than 8 inches	5
2	{ With elongated hackles on hind neck	<i>Caloenas nicobarica.</i>
	{ Feathers on hind neck normal	3
	{ General colour lead-grey	<i>Columba livia intermedia.</i>
3	{ General colour ivory-white	<i>Myristicivora bicolor.</i>
	{ General colour above bronzy green	<i>Muscadivora aenea.</i>
	{ General colour above maroon or liver-brown	4
4	{ Breast grey, rump uniform with back	<i>Ducula badia and griseicapilla.</i>
	{ Breast ochraceous, rump grey contrasting with back	<i>Alsocomus puniceus.</i>
	{ Always with metallic bronzy green in plumage	<i>Chalcophaps indica.</i>
5	{ Always with non-metallic green in plumage	6
	{ Always without any green in plumage	13
6	{ Wing exceeding 7 inches	<i>Butreron capelli.</i>
	{ Wing less than 7 inches	7
7	{ With a magenta cap or magenta wash on crown	<i>Ptilonopus jambu.</i>
	{ With no magenta cap or wash	8
8	{ Bill swollen towards tip	<i>Treron curvirostra nipalensis.</i>
	{ Bill slender, not swollen towards tip	9
9	{ Wing less than 5 inches	<i>Treron olax.</i>
	{ Wing more than 5 inches	10
10	{ Middle feathers of tail green	11
	{ Middle feathers of tail grey	12
11	{ Tibial plumes bright chrome yellow	<i>Treron fulvicollis.</i>
	{ Tibial plumes buff or dull yellow	<i>Treron pompadora phayrei.</i>
12	{ Pale apical band to tail $\frac{1}{2}$ inch or more broad	<i>Treron bicincta praetermissa.</i>
	{ Pale apical band less than $\frac{1}{2}$ inch broad	<i>Treron vernans.</i>
13	{ With a black collar on nape	14
	{ With no black collar	15
14	{ Collar narrow and entirely black.	<i>Oenopopelia tranquebarica humilis.</i>
	{ Collar broad and spotted with white	<i>Streptopelia suratensis tigrina.</i>
	{ Wing about 7 inches	<i>Macropygia leptogrammica.</i>
15	{ Wing about 5.5 inches	<i>Macropygia ruficeps.</i>
	{ Wing about 4 inches	<i>Geopelia striata.</i>

17. *Butreron capelli* (Temm.).

Columba capelli, Temm., Pl. Col., 1823, pl. 143 (Java).

Butreron capelli, Anderson, Journ. Linn. Soc., Zool., xxi., 1887, p. 152 (Elphinstone Island, Mergui Archipelago); E., p. 122 (Patani States); F., p. 672 (Trang); Stuart Baker, Indian Pigeons and Doves, 1913, p. 64, pl. 4.

"Iris dark; eyelids green and yellow; bill pale greenish white; cere dull olive; feet ochre yellow".

Rare in Peninsular, and apparently not found in S. W. Siam.

18. *Treron curvirostra nipalensis* (Hodgs.).

Toria nipalensis, Hodgs. Asiat. Res. xix, 1836, p. 164, pl. ix (Nepal).

Treron nipalensis, A., p. 410 (Tavoy to Malewoon); C. ii, p. 306; F., p. 674 (Trang); G., p. 151 (Rattburi and Petchaburi); Stuart Baker, Indian Pigeons and Doves, 1913, p. 66, pl. 5; H., p. 140 (Koh Samui, Bandon); Buttikofer, Notes Leyden Museum, xxi, 1899, p. 266; I., p. 153 (Koh Lak).

Treron curvirostra nipalensis, J., p. 135 (Pulau Telibun); L, p. 90 (Junk Saylor).

♂, ♀. Koh Pipidon, W. Siam. 3 February, 1919. [Nos. 3929, 30].

♂. Pang-nga river, W. Siam. 11 February, 1919. [No. 3947].

♂. De Lisle Island, W. Coast Siam. 19 February, 1919. [No. 4122].

♂, 2 ♀. Tapli, Pakchan Estuary, Peninsular Siam. 3-7 March, 1919. [Nos. 4392, 4412, 4466].

♂. Tasan, Chumpon, Peninsular Siam. 14 March, 1919. [No. 4586].

"Male. Iris, inner ring yellow, outer deep bronze, orbits verditer; bill, frontal half pale yellow-green, base crimson; feet magenta-lake or maroon".

Total length ♂, 248,—, 265, 248, 247; ♀, 260, 258, 257; wing ♂, 138, 133 (dry skin) 148, 138, 136; ♀, 143, 138, 136; tail ♂, 89,—, 90, 84, 92; ♀, 85, 80, 80; tarsus ♂, 19,—, —, 19.5, 16; ♀, 20, 18.5, 18; bill from gape ♂, 22,—, 20, 21, 20; ♀, 22, 23, 20 mm.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

A great deal of confusion has arisen over the races of the Thick-billed Green Pigeon. It appears to be borne out by the statements of all writers that the continental race southwards, to the northern third of the Malay Peninsula, is consistently larger than birds from the southern two-thirds of the Malay Peninsula, Sumatra, Borneo and Bangka. Palawan and Sulu birds are also stated to be larger.

Every area has its name, viz :—

Treron curvirostra Gm. ... 1788. Malay Peninsula, *terra typica* designated by Oberholser, 1912. Now restricted to Selangor.

Treron nipalensis Hodgson ... 1836. Nepal, etc.

Treron griseicauda Gray ... 1856. Java.

Treron nasica Schleg. ... 1863. Borneo and Sumatra (?)

Treron harterti Parrot ... 1907. N. E. Sumatra.

There are also other races from the Barussan Islands.

No one will probably dispute that the bird figured by Latham (Gen. Syn. Birds, ii, 1788, p. 632, pl. 59: and latinized by Gmelin as *Columba curvirostra*, Syst. Nat. i, 1788, p. 777) represents the first description of the species, though attached to a wrong locality (Tanna, New Hebrides). Unless we are prepared to recognize the mere references by Raffles and Vigors of Sumatran birds to *Columba curvirostra* (Gm.), as a fixation of the type locality, we are bound to admit *T. c. harterti* as the name for the Sumatran bird (if distinct from the Bornean and Javanese);* *T. c. nasica*† for the Bornean; *T. c. curvirostra* for the Malayan; and *T. c. griseicauda* for the Javan-

*Schlegel (Ned. Tijds. Dierk, i, 1864, pp. 67, 8) records both *griseicauda* and *nasica* from Sumatra.

†Some authorities, however, including Wallace, claim that *T. nasica* is a distinct species, occurring together with *T. curvirostra* and differing mainly in the colour of the soft parts.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part): Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part):

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part)

ese bird. We have been able to compare Bornean, Malayan, Siamese, Cochín-Chinese and Annamese specimens, and are certain that, broadly speaking, no real colour-distinction can be correlated with range, but the northern birds are undoubtedly on average larger than the Malayan.

The whole of the series of the Malay Peninsula, from its extreme northern limit to the islands south of Singapore, does not afford any bird approaching in smallness the minimum wing dimensions for *T. curvirostra* given by Stuart Baker (124 mm.), while some from the extreme south are as large as others from the extreme north.

On the whole, however, it is true that northern birds average larger than the southern. Rather than use the elaborate typography of Stresemann, we have recorded the northern birds within Siamese limits as *T. c. nipalensis*, while the southern birds are, by Oberholser's designation, typical *T. c. curvirostra*. For convenience sake we specify as a more exact type locality, Rawang, Selangor—as the Malay Peninsula is 800 miles long and contains two forms of the species.

In the Journ. Nat. Hist. Soc. Siam, iv, 1920, p. 31, Baker claims that Oberholser cannot select the Malay Peninsula for the typical locality of *T. c. curvirostra*, as he himself had already shown, in his "Indian Pigeons and Doves," that the correct type locality was Sumatra. Mr. Baker's claim, however, comes too late: his book was published in 1913, whereas Oberholser had already selected the Malay Peninsula in 1912. We, ourselves, do not consider that anything in Baker's remarks (*op. cit.*, p. 68) constitutes a fixation of type locality.

In any event Sumatra has been ruled out in this connection since 1907, as Parrot then described and named the island bird.

19. *Treron vernans vernans* (Linn.).

Columba vernans, Linn., Mant., 1771, p. 526 (Philippines).

Osmotreron viridis, B., p. 78 (Peninsular Siam).

Osmotreron vernans, C. i, p. 309 (Malay Peninsula); D., p. 76 (Patani); E., p. 122 (Patani); F., p. 674 (Malay Peninsula); H.,

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1893.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

pp. 88, 140 (Bandon, Koh Samui and Koh Pennan); J., p. 135 (Langkawi Islands); L., p. 89 (Ghirbi and islands).
Treron vernans vernans, M. I., p. 31 (Tung Song and Patiyu).
 A common bird throughout our region in suitable localities.

♂0. *Treron bicincta prætermisssa* Rob. and Kloss.

Treron bisincta prætermisssa, Robinson & Kloss, Journ. Fed. Malay States Mus. x, 1921, p. 203 (Koh Lak).

Osmotreron bicincta, A., p. 411: C. ii, 1883, p. 308; B., p. 159 (Sulanga); F., p. 674 (Trang); G., p. 151 (Ratburi & Petchaburi).

Osmotreron bicincta domvillii, Stuart Baker, Indian Pigeons & Doves, 1913, p. 49; L., p. 154 (Koh Lak); L., p. 89 (Ghirbi & Pulau Panjang).

♂. De Lisle Island, W. Coast Siam. 19 February, 1919.

[No. 4121].

♂ ♀. Koh Lak, S. W. Siam. 5 April, 1919. [Nos. 5075, 7075].

"Iris, outer ring pale orange, inner ring blue; bill ivory, greenish at tip; feet pink."

Total length ♂, 292, 285*; ♀, 273*; wing ♂, 158, 161*; ♀, 162*; tail ♂, 103, 105*; ♀, 100*; tarsus ♂, 19, 23*; ♀, 21*; bill from gape ♂, 22, 22*; ♀, 23* mm.

Diagnosis. Larger than *D. b. bisincta* from Madras (wing 144): differs from *D. b. domvillii* Swinh. from Hainan in having the grey nuchal patch in the female clear and more extensive, whereas (*vide* Hartert) it is "indistinct and small" in the island bird.

Hartert has inadvertently (Nov. Zool. xvii, 1910, p. 192) described the Ceylon bird as being smaller, though his specimens are exactly the same size as the typical birds from Madras. Swinhoe states that his *domvillii* is smaller than the typical form (presumably the bird now described), but this is denied by Hartert.

E. and S. E. Siam birds appear to be small; those measured by us have the wing always under 150 mm.

In addition to the above three specimens, we have examined four males and four females from various localities from Junk

* Types.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Seylon to Selangor; wings varying from 157–163 mm. in males and 157–160 in females.

21. *Treron pompadora phayrei* (Blyth).

Osmotreron phayrei, Blyth, Journ. Asiat. Soc. Bengal, xxxi, 1862, p. 344 (Toumghoo); A., pp. 412, 414 (Tavoy, Nwalabo); G., p. 151 (Ratburi and Petchaburi).

Osmotreron pompadora phayrei, Stuart Baker, Indian Pigeons and Doves, 1913, p. 27.

Mr. Gairdner's record is the only one for our portion of Siam. The bird however extends to Cochin-China. On the Tenasserim coast it ranges south as far as Tavoy.

22. *Treron fulvicollis fulvicollis* (Wagl.).

Columba fulvicollis, Wagler, Syst. Av. Columba, sp. 8 (1827, Java).

Osmotreron fulvicollis, A., p. 413 (Pakchan); Stuart Baker, Indian Pigeons and Doves, 1913, p. 46, pl. 2.

This species has not hitherto been obtained in Siam, though it is abundant in the Pakchan estuary from December to March.

It should be noted that the type description is founded on *Columba aromatica* var., Temm. & Knip, fig. 1, p. 30, pl. 6 (1808–11), said to be from Batavia. The species however does not occur in Java, so far as is known, and it will be convenient to regard the *terra typica* as fixed on Sumatra.

The mainland representative, if it is ever recognised as distinct, will be known as *T. f. tenuirostre* (Eyton, 1845, type locality Malacca). The north Bornean, or possibly the montane form in Borneo, is *T. f. baramensis* (Meyer, 1891), from Baram river, N. Sarawak.

The lowland and south Bornean form, if it is distinct, has no name, as *Columba cinnamomea* Temm., 1835, applied to birds from Pontianak, is antedated by *Columba cinnamomea* Swains. (*vide* Salvadori, Cat. Birds Brit. Mus. xxi, 1893, p. 53).

It should further be observed that Celebes and the Phillipines, quoted in the distribution by certain authors, are not definitely known to be inhabited by this species.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Salango, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

23. *Treron olax* (Temm.).

Columba olax, Temm., Pl. Col., 1823, pl. 241 (Sumatra).

Osmotreron olax, Salvad., Cat. Birds Brit. Mus. xxi, 1893, p. 64 (Kossoum).

Treron olax, M. I., p. 30 (Klong Wang Hip, Tung Song).

A pair collected by J. Darling near Ghirbi in June, and now in the British Museum, appear to be the most northerly records for Siam of the Little Green Pigeon.

24. *Ptilinopus jambu* (Gm.).

Columba jambu, Gm., Syst. Nat. ii, 2, 1788, p. 784 (Sumatra).

Rhamphiculus jambu, B., p. 79 ("Malay Peninsula").

In his paper on the birds of Salanga (Puket or Junk Seylon), H. Müller mentions two males and two females from "the Malay Peninsula" without precise locality. As he probably obtained them from the adjacent mainland, and as there is no inherent improbability for the occurrence, we include them here, though hitherto the species has not been recorded from further north than Province Wellesley.

Both sexes differ from all other local pigeons in having a magenta cap: the female is green beneath with a small cinnamon patch on the chin: the adult male is pure ivory white below with a large rose coloured patch on the breast.

"Iris crimson; bill slate, base of culmen dull crimson; feet crimson lake."

25. *Muscadivora aenea aenea* (Linn.).

Columba aenea, Linn., Syst. Nat., i, 1766, p. 283 (Moluccas).

Carpophaga aenea, A., p. 416; C. ii, 1883, p. 301; H., p. 141 (Koh Pennan and Koh Samui); G., p. 151 (Ratburi and Petchaburi).

Carpophaga aenea aenea, Stuart Baker, Indian Pigeons and Doves, 1912, p. 91, pl. 7; I., p. 155 (Hat Sanuk); J., p. 136 (Terutau and Pulau Muntia); L., p. 90 (Pulau Payang, Ghirbi Bay).

♂, ♀. Pulau Mohea (N. Island), W. Coast Siam. 1-2 February, 1919. [Nos. 3913, 3915].

♂. Koh Pipidon, Ghirbi Bay, W. Siam. 4 February, 1919. [No. 3935].

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).
M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

♀. Koh Yam Yai, W. Siam. 18 February, 1919. [No. 4115].

♀. Koh Yam Noi, W. Siam. 19 February, 1919. [No. 4120].

Total length ♂, 390, 435; ♀, 425, 400, 404; wing ♂, 233, 234; ♀, 244, 223, 238; tail ♂, 146, 170; ♀, 163, 148, 150; tarsus ♂, 39, 36; ♀, 31, 39, 39; bill from gape ♂, 34, 36; ♀, 38, 34, 32 mm.

This small series varies much in the tint of the bronzy green upper surface and in the degree of the vinaceous wash on the head and neck. In size the birds agree with other specimens from the south of the the Malay Peninsula and adjacent islands. The original type locality given by Linnæus was the Moluccas, where the species is not found.

Ducula badia badia (Raffles).

Columba badia, Raffles, Trans. Linn. Soc. xiii, 1822, p. 317 (Sumatra).

Carpophaga sp., A., p. 417 (Mergui); Anderson, Journ. Linn. Soc. Zool., xxi, 1187, p. 151 (Sullivan Id., Mergui Archipelago).

There is no definite record of this species in Peninsular or S. W. Siam, though it is extremely common in the mountains throughout the Federated Malay States, coming down to the coast at certain seasons. It is almost certain to be found in the mountains of Trang or in the high mountains separating Patani from Perak. As Hume observes, the fruit pigeons seen by Davison in immense numbers at Mergui in August were probably this form.

26. *Ducula badia griseicapilla* Wald.

Ducula griseicapilla, Wald., Ann. and Mag. Nat. Hist (4) xvi, 1875, p. 228 (Karin Hills) & G., p. 515 (Ratburi and Petchaburi).

Ducula insignis griseicapilla, Stuart Baker, Indian Pigeons and Doves, 1913, p. 104, pl. 8.

The only record for our area is that of Gairdner from Ratburi or Petchaburi. All the forms of the subgenus currently accepted as *Ducula*, with the possible exception of the Javan *D. lucernulata* and allied races from Bali and Lombok, obviously stand in subspecific relation to each other. The plate given by S. Baker, *loc. cit.*, is brighter on the shoulders than our specimens of *D. b. griseicapilla* from

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Annam, and in this respect approaches *D. b. badia*. The present subspecies may be separated from *D. b. badia* by its rather larger size, less rich and purplish colour above and paler buff under tail-coverts.

27. *Columba livia intermedia* Strickl.

Columba intermedia, Strickl., Ann. and Mag. Nat. Hist. xiii, 1844, p. 39 (India); Salvad., Cat. Birds Brit. Mus., xxi, 1893, p. 261, spm. m3 (Salanga); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 30 (Tachin and Bangkok).

It is doubtful if any rock-pigeons from central and south Siam can be regarded as truly wild: we record it for this area merely on the strength of a skin from Salanga (Puket), now in the British Museum.

28. *Alsocomus puniceus* (Tick.).

C. (Alsocomus) puniceus, Blyth, Journ. Asiat. Soc. Bengal, xi, 1842, p. 461 (Singhbhum, Chota Nagpur).

Alsocomus puniceus, A., p. 418; C. ii, 1883, p. 289; Stuart Baker, Indian Pigeons and Doves (1913), p. 176, pl. 18, I., p. 151 (nr. Koh Lak); G., p. 151 (Ratburi and Petchaburi); Kp.; 83 (Koh Lak).

Columba punicea, F., p. 674 (Pulau Terutau); J., p. 136 (Pulau Muntia); L., p. 90 (Junk Seylon).

"Iris, inner ring yellow, outer orange; bill, plum coloured at base, whitish horn at tip; feet pinkish maroon."

This fine pigeon is fairly common in the winter months on the islands off the west coast of Siam, though whether it is a resident or a seasonal visitor is unknown, as collecting is inconvenient or impossible in these localities during the summer. On the east coast it is apparently much rarer. Our series shows that the sexes are practically alike, females with the grey cap similar to adult males, but with the undersurface with slightly less gloss and more brick-red, less purplish in tint.

On Koh Muk, in January 1917, they were roosting in mangroves behind a sandy beach, apparently feeding on the mainland, distant about three miles, during the day.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

29. *Myristicivora bicolor bicolor* (Scop.).

Columba bicolor, Scop., Del. Flor. et Faun. Insubr. ii, p. 94 (1786).

Myristicivora bicolor, Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 61 (Chumpon Bay).

Though the species must certainly occur at times on the Siamese side of the international boundary through the Langkawi group, specimens have not actually been obtained from that locality. The only record therefore from our area is the above specimen from Chumpon. The species also occurs on the Koh-Si-Chang group in the Inner Gulf of Siam. It is likewise found in Cochin-China.

Macropygia leptogrammica, subsp.?

Columba leptogrammica, Temm., Pl. Col., 1835, pl. 560 (Java and Sumatra).

Coccyzura tusalia, Hodgs. in Blyth, Journ. Asiat. Soc. Bengal, xii, 1843, p. 937, note (D.rjiling).

Macropygia tusalia, Stuart Baker, Indian Pigeons and Doves, 1913, p. 238, pl. 24.

The forms of the large Cuckoo Dove inhabiting Java, Sumatra and the southern Malay Peninsula, Hainan and the Indo-Chinese countries stand in very close subspecific relation and will, as the oldest name, have all to be called *M. leptogrammica*.

Though it is very likely that a bird of this species will be found inhabiting the higher hills, no specimen has been actually obtained, though there is a note by Gairdner of a bird, "probably *tusalia*", having been seen somewhere in Ratburi or Petchaburi.

Macropygia ruficeps, subsp.

Columba ruficeps, Temm., Pl. Col., 1835, pl. 561 (Java).

Macropygia assimilis, Hume, Stray Feath. ii, 1874, p. 441 (Hills of Tenasserim).

Of this Cuckoo Dove, also, with the exception of one specimen from the extreme north of Siam, which is not germane to the present paper, there are no specimens whatever on record from Siam. The species, however, is certain to occur in suitable localities throughout the country.

Those from Patani, etc., will be almost certain to agree with

A. Hume, & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, *Ibis*, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

the form found in Perak, Province Wellesley and further south: while those from Peninsular Siam to the north will probably agree with *M. assimilis*, which is always a browner and less rufous bird.

The species is a skulker, found in thick undergrowth, and is extraordinarily fond of the small chillies grown by Malays. In the Federated Malay States it is nearly always abundant in the vicinity of hot springs.

30. *Oenopopelia tranquebarica humilis* (Temm.).

Columba humilis, Temm., Pl. Col., 1834, pl. 259 (Bengal and Luzon).

Turtur humilis, Walden, Trans. Zool. Soc. ix, 1875, p. 219 (type locality selected, Luzon); A., p. 423 (Pakchan); C. ii, 1883, p. 294 (Malay Peninsula).

Oenopopelia tranquebarica humilis, Stuart Baker, Indian Pigeons and Doves, 1913, p. 234, pl. 23; I., p. 150 (Koh Lak); K., p. 84 (Koh Lak).

Oenopopelia tranquebarica, G., p. 151 (Ratburi and Petchaburi).

Pakchan is the southernmost authenticated locality for this species: no credence need be placed on the locality "Malacca", attached to certain specimens.

Females differ considerably from males in being much less vinous.

31. *Streptopelia chinensis tigrina* (Temm. & Knip.).

Columba tigrina, Temm. Fig. i, 1808-11, pl. 43 (Batavia).

Turtur tigrina, A., p. 442; C. ii, 1883, p. 290; B., p. 79 (Junk Seylon); D., p. 77 (Patani); E., p. 121 (Patani); F., p. 675 (Trang); H., p. 88, 141 (Bandon and Koh Pennan); G., p. 151 (Ratburi and Petchaburi).

Turtur tigrinus minor, Parrot, Abhandl. der K. Bayer. Akad. der Wissench. Munchen; ii, kl. xxiv, 1907, Bd. 1, p. 275 (Sumatra).

Streptopelia suratensis tigrina, Stuart Baker, Indian Pigeons and Doves, 1913, p. 210, pl. 21; J., p. 136 (Pulan Lontar); K., p. 83 (Koh Lak); L., p. 90 (Junk Seylon, etc.); M. I, p. 32 (Tung Song).

2 ♂. Tapli, Pakchan Estuary, Peninsular Siam. 11 March, 1919. [Nos. 4535, 6].

♂, ♀. Koh Lak, S. W. Siam. 4-7 April, 1919. [Nos. 5015, 5147].

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

"Iris orange; bill greyish black; feet maroon".

Total length ♂, 306, 318, 317; ♀, 305; wing ♂, 140, 141, 145; ♀, 146; tail ♂, 148, 152, 147; ♀, 150 (worn); tarsus ♂, 26, 25, 25; ♀, 25; bill from gape ♂, 22.5, 20; ♀, 22 mm.

Extraordinarily common over the whole area in family parties or small flocks, keeping to open country.

The very large series that we have examined does not bear out Parrot's contention that the mainland birds are smaller than those from Java, though topotypes of his race from Deli are under 140 mm. in the wing.

32. *Geopelia striata striata* (Linn.).

Columba striata, Linn., Syst. Nat. i, 1766, p. 282 (East Indies).

Geopelia striata, A., p. 423; C. ii, 1883, p. 298; B., p. 79 (Junk Seylon); E., p. 121 (Patani); Stuart Baker, Indian Pigeons and Doves, 1913, p. 253, pl. 26; H., p. 137 (Pulau Lontar); L., p. 90 (Ghirbi); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 72.

Geopelia striata striata, M.l, p. 32 (Tung Song).

2 ♂. Tapli, Pakchan Estuary, Peninsular Siam. 11 March, 1919. [Nos. 4533-8].

"Iris whitish, orbits silvery verditer; cere silvery blue; bill pale horn; feet dark maroon".

Total length 230, 228; wing 98, 94; tail 108, 105; tarsus 21, 20; bill from gape 16, 17 mm.

Very common in open spaces with the preceding, possibly becoming scarcer further north.

33. *Chalcophaps indica indica* (Linn.).

Columba indica, Linn., Syst. Nat. i, 1766, p. 284 (East Indies).

Chalcophaps indica, A., p. 424; C. ii, 1883, p. 297; D., p. 77 (Patani); E., p. 122 (Patani); F., p. 675 (Trang); H., p. 88 (Bandon); *id. op. cit.* vii, 1917, p. 137 (Terutau); G., p. 151 (Ratburi and Petchaburi); Stuart Baker, Indian Pigeons and Doves, 1913, p. 121 pl. 11; L., p. 90 (Ghirbi, Puket Islands).

Chalcophaps indica indica, M.l, p. 32 (Tung Song and Patiyu).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♀. Tapli, Pakchan Estuary, Peninsular Siam. 2 March, 1919.
[No. 4375].

♂, ♀. Tasan, Chumpon, Peninsular Siam. 13 March, 1919.
[Nos. 4559-60].

♂. Hat Sanuk, nr. Koh Lak, S. W. Siam. 15 April, 1919.
[No. 5323].

"Iris dark, eyelid crimson, orbits purplish slate; bill coral, cere maroon; feet dark maroon".

Total length ♂, 249, 245; ♀, 251, 238; wing ♂, 142, 142; ♀, 145, 137; tail ♂, 100, 88; ♀, 87, 95; tarsus ♂, 25, 24; ♀, 22, 22; bill from gape ♂, 22, 22; ♀, 20. 5, 27 mm.

Common throughout the area, wherever there are suitable evergreen forests.

34. *Caloenas nicobarica nicobarica* (Linn.).

Columba nicobarica, Linn., Syst. Nat. i, 1766, p. 283 (Nicobar Islands).

Caloenas nicobarica, A., p. 425 (Mergui Archipelago); F., p. 675 (Terutau).

♂, ♀, ad. Pulau Mohea (South Island), W. Coast Siam. 2-3 March, 1919. [Nos. 3920-1].

♂, imm. Koh Pipidon, Ghirbi Bay, W. Coast Siam. 4 March, 1919. [No. 3940].

"Iris hazel; bill and cere black, orbits dull pale olive; feet livid plum, claws gamboge". Immature birds with the iris grey and feet duller.

Total length ♂, 380, 348; ♀, 380; wing ♂, 247, 237; ♀, 257; tail ♂, 106, 100; ♀, 106; tarsus ♂, 42, 46; ♀, 45; bill from gape ♂, 35, 33; ♀, 35 mm.

Fully adult males and females are alike: immature birds differ in having the hackles shorter and the tail black, glossed with green, not pure white. At certain seasons this bird appears to be common on the islands off the west coast of Siam; on the east coast it is

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part)

known from the smaller islands of the Pahang and Johore Archipelago and the Redang group off Trengganu; but it has not been found on the islands off the east coast of Peninsular and S. W. Siam, though it occurs on Pulo Condore, off Cochin-China. Nowhere is it ever met with on the mainland. The habits in the main are those of the jungle game-birds; it is a runner and does not readily take to the trees unless persistently disturbed, though it roosts in them at night.

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| A. Hume & Davison, <i>Stray Feathers</i> , vi, 1878. | E. O. Grant, <i>Fasciculi Malayenses</i> , iii (Birds), 1905. |
| B. Müller, <i>Die Ornithologie der Insel Salanga</i> , 1892. | F. Robinson and Kloss, <i>Ibis</i> , 1910-11. |
| C. Oates, <i>Birds Brit. Burmah</i> , Vols. i & ii, 1883. | G. Gairdner, <i>Journ. N. H. Soc. Siam</i> , i, 1915. |
| D. Bonhote, <i>P. Z. S.</i> 1901, Vol. i. | H. Robinson, <i>Journ. F. M. S. Museums</i> , v, 1915. |

RALLIFORMES.

RAILS AND GALLINULES.

1	{ Tail-feathers eighteen	<i>Heliopais personata.</i>	
	{ Tail-feathers ten or twelve .. .. .	.. .. .	2
2	{ With a horny frontal shield .. .. .	.. .. .	3
	{ With no horny frontal shield .. .. .	.. .. .	5
3	{ General plumage blue	<i>Porphyrio calvus edwardsi.</i>	
	{ General plumage not blue .. .. .	.. .. .	4
4	{ Toes with a narrow membranous fringe, not lobed	<i>Gallinula chloropus parvifrons.</i>	
	{ Toes without a membranous fringe	<i>Gallinula cinerea.</i>	
5	{ Plumage uniform above .. .. .	.. .. .	6
	{ Plumage streaked above .. .. .	.. .. .	10
6	{ Culmen expanded at base; plumage white and slate	<i>Anaorornis phoenicurus chinensis.</i>	
	{ Culmen not expanded at base; plumage brown and rufous .. .. .	.. .. .	7
7	{ Tarsus about equal to middle toe and claw .. .. .	.. .. .	8
	{ Tarsus shorter than middle toe and claw .. .. .	.. .. .	9
8	{ Wing coverts barred; legs red	<i>Rallina fasciata.</i>	
	{ Wing coverts uniform; legs black	<i>Rallina superciliaris.</i>	
9	{ Larger; plumage partially barred below	<i>Limnobaenus paykulli.</i>	
	{ Smaller; plumage uniform below	<i>Limnobaenus fuscus erythrothorax.</i>	
10	{ Culmen about equal to middle toe and claw	<i>Hypotaenidia striata.</i>	
	{ Culmen much shorter than middle toe and claw	<i>Porzana pusilla.</i>	

35. *Heliopais personata* (G. R. Gr.).

Podica personata, G. R. Gray, P. Z. S., 1848, p. 90, Aves, pl. 4 (Malacca); A., p. 465, (Banharon).

Heliopais personata, D., p. 79 (Patani); H., p. 141 (Koh Pennan, Bandon); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 32 (Chantabun).

♂, Koh Pennan, Bandon Bight. 27 May, 1913.

Wing, 245 mm. (dry).

"Iris dark hazel; feet apple green with tinge of blue; edges of lobes and soles yellowish; lobes black beneath; bill chrome yellow, yellowish green on culmen; basal culminal process chrome yellow."

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

The Masked Finfoot is everywhere an extremely rare bird: it is usually found on fairly rapid rivers or small streams, feeding under the banks and, when alarmed, moving through the water with the aid of its wings, rarely taking properly to flight.

The eggs of the Masked Finfoot, hitherto unknown, have recently been discovered on the Myitmaka river, Southern Burma, and have been described by Mr. E. C. Stuart Baker in "Bull. Brit. Orn. Club," xli, 1921, p. 57. A fuller account of the nidification is given by Mr. Cyril Hopwood, "Journ. Nat. Hist. Soc. Bombay," xxvii, 1921, pp. 634-636.

36. *Hypotaenidia striata* (Linn.).

Rallus striatus, Linn., Syst. Nat. i, 1766, p. 292 (Philippines).

Rallus albiventer, Swains. Anim. Menag. 1837, p. 337 (India).

Hypotaenidia striata, A., p. 468 (Tavoy); B., p. 85. (Malay Peninsula).

Hypotaenidia striata gularis, M.1, p. 36 (near Bangkok).

The only record for this common Rail from the area is that of Müller, from the "Malay Peninsula"—presumably adjacent to the island of Puket. Our series from the Federated Malay States is also singularly deficient, and as we have no specimens from Java we are unable to state to which of the named races the Siamese bird should be assigned. Baker calls it *gularis* (Horsf.), whereas Oberholser (Proc. U. S. Nat. Mus. 55, 1919, p. 478) confines that race to Java, and considers that birds ranging from India to the Malay Peninsula and Cochin-China should stand as *H. s. albiventris* Swainson.

Eight birds in Mr. Williamson's collection, all from the vicinity of Bangkok, agree well with three from Sumatra, but are paler both above and below than two from S. W. Borneo which are almost certainly identical with the Javan bird.

37. *Rallina superciliaris* (Eyton).

Rallus superciliaris, Eyton, Ann. and Mag. Nat. Hist. xvi, 1845, p. 230 (Malacca).

Rallina fasciata, Rob. and Kloss (*nec* Raffles); L., p. 91 (Pulau Sireh, Junk Seylon).

♂. Tasan, Chumpon, Peninsular Siam. 28 March, 1919. [No. 4923].

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Barmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Our specimen from Pulau Sirih, near Puket, which is quite immature, was unfortunately wrongly identified; it belongs to this species.

Little is known of the true breeding range: most of the specimens in our possession have been obtained either at sea or on small islands or on the tops of high mountains, evidently on passage. It can at once be distinguished from *R. fasciata* by its greenish black, not crimson, legs, and by the much smaller bill.

38. *Rallina fasciata* (Raffles).

Rallus fasciatus, Raffles, Trans. Linn. Soc. xiii, 1822, p. 328 (Sumatra).

Rallina fasciata, C. ii, p. 341 (Tavoy); D., p. 78 (Patani); H., p. 137 (Terutau).

Both this species and the following are highly migratory birds, though whether merely within local limits, or from breeding to winter quarters, is not known with certainty.

At the end of October, 1909, after a period of heavy wind and rain, this bird appeared in very large numbers near Alor Star, Kedah, and was trapped in quantity by the local Malays.

Limnobaenus paykulli (Ljung).

Rallus paykulli, Ljung, Sv. Vet. Akad. Handl., 1813, p. 258, Taf. v, (Batavia).

Rallina mandarina, Swinh., Ann. & Mag. Nat. Hist. (4) v, 1870, p. 173 (Canton).

This species is sparsely distributed during winter in Java, Borneo and the Malay Peninsula, and appears to be a breeding bird in E. Siberia and China. It is easily confused with immature specimens of *Rallina supercilialis* from which it differs in being of a darker colour above, and in having the middle toe and claw distinctly longer than the tarsus.

The bill is shorter, and in the specimens before us the barring on the under surface is not continuous across the centre of the belly.

I. Gylldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
(third part).

39. *Limnobaenus fuscus erythrothorax* (Temm. & Schleg.).

Gallinula erythrothorax, Temm. & Schleg., Faun. Japan., Aves, 1850, p. 121, pl. xxviii (Japan).

Amaurornis fuscus, F., p. 120 (Patani).

Limnobaenus fuscus, H., p. 141 (Koh Samui, Bandon).

1 ♂. West side, Koh Samui, Bandon Bight. 6 May, 1913.

Wing (dry) 103 mm.

"Iris and orbits red; bill bluish green; legs pale coral; claws black."

The typical form of this species was described from the Philippines: and birds from Java, Sumatra and the south of the Malay Peninsula, named *Rallus rubiginosus*, Temm. Pl. Col. pl. 357 (1825), are identical with it, all having the wing 98 mm. or under.

Chinese and Japanese birds, *L. f. erythrothorax*, are said to have the wing over 105 mm., while Indian (Nepal, etc.) birds, figured and named by Hodgson as *Zapornia flammiceps*, but apparently never described, are stated by Sharpe (Cat. Birds Brit. Mus. xxiii, 1894, p. 147) to be intermediate. Southern Indian birds are as small as Malayan, but have not been named.

Mr. Hartert has named the N. Indian bird *Porzana f. bakeri* (Nov. Zool. xxiv, 1917, p. 272), type from Kumaon.

We have examined twelve specimens in Mr. Williamson's collection (eleven from near Bangkok and one from Meklong), shot in the months January to May. They differ from Sumatran and Malayan birds in having the wing from 103–112 mm., against a maximum of 98, and in being paler in tint both above and below. The extent of the red on the crown is a variable quantity. We regard them all as belonging to this race and not to *P. f. bakeri*.

40. *Porzana pusilla pusilla* (Pall.).

Rallus pusillus, Pall., Reise Prov. Russ. Reichs. iii, p. 700 (1776—Dauria).

Porzana auricularis, Rehnw., Journ. für. Orn. 1898, p. 139 (new name).

Porzana bailloni, A., p. 467 (Tavoy).

Porzana pusilla, D., p. 79 (Patelung); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 32 (Bangkok).

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Rare or extremely difficult to procure in our area: probably not uncommon in the great reed beds and swamps at the north end of the Talé Sap and Talé Noi.

41. *Amaurornis phoenicura chinensis* (Bodd.).

Fulica chinensis, Boddaert, Tabl. Pl. Enl., 1783, p. 54 (Hong-kong).

Gallinula phoenicura, A., p. 466 (Banharoon)

Erythra phoenicura, B., p. 86 (Junk Sylon); C. ii, p. 348.

Amaurornis phoenicura, E., p. 120 (Jalor); E., p. 11 (Trang); G., p. 132 (Ratburi and Petchaburi).

Amaurornis phoenicura chinensis, Stresemann, Nov. Zool. xx, 1913, p. 304 (Hong Kong); H., p. 141 (Koh Pennan); L., p. 148 (Hat Sanuk); L., p. 91 (Pulau Panjang, Ghibi Bay); M. I, p. 37 (Patiyu).

2 ♂. Tasan, Chumpon, Peninsular Siam. 19—26 March, 1919.

[Nos. 4814, 4807].

♀. Hat Sanuk, nr. Koh Lak, S. W. Siam. 17 April, 1919

[No. 5369].

"Iris red; bill sea-green, reddish above and on cere; feet yellowish brown."

Total length ♂, 323; 335; ♀, 305; wing ♂, 176, 168; ♀, 168; tail ♂, 78, 77; ♀, 70; tarsus ♂, 51, 54; ♀, 52; bill from gape ♂, 40, 40; ♀, 37.

Universally distributed over the area in suitable localities. These birds are rather large, Malayan specimens being slightly smaller than typical Chinese birds.

***Gallinula chloropus parvifrons* Blyth.**

Gallinula parvifrons, Blyth, Journ. Asiat. Soc. Bengal, x'i, 1843, p. 180 (nr. Calcutta).

Gallinula chloropus, A., p. 466 (Tavoy Estuary).

Gallinula chloropus parvifrons, Claude Grant, Ibis, 1915, p. 47; Hartert, Nov. Zool. xxiv, 1917, p. 268.

We have examined nine specimens from various parts of Siam, south to Bangkok. All belong to this form, which is distinguished from the European Moorhen by its small size and by having the frontal shield almost parallel-sided, not expanded posteriorly.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, This, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part)

From *Gallinula chloropus orientalis*, Horsf., Trans. Linn. Soc. xiii, 1821, p. 195 (Java), inhabiting Java, Sumatra, Borneo, and found as a breeding bird in the southern half of the Malay Peninsula, it is distinguished by the smaller frontal shield and by the brown mantle and wing coverts, which are pure grey in the Malayan bird.

There are no actual records of any kind from S. W. or Peninsular Siam, but the race is certain to be found there. *Gallinula chloropus orientalis* will probably also be found in the Patani Province.

42. *Gallicrex cinerea* (Gm.).

Fulica cinerea, Gm., Syst. Nat. i, 1788 p. 702, (China).

Gallicrex cinerea, A., p. 466 (Tavoy); D., p. 79 (Patelung); E., p. 120 (Patani town); G., p. 152 (Ratburi and Petchaburi).

The Water Cock is probably common in swampy situations and at the edges of ricefields throughout the country.

43. *Porphyrio calvus edwardsi* Elliot.

Porphyrio edwardsi, Elliot, Ann. & Mag. Nat. Hist. (5) i, 1878, p. 98 (Cochin China); id., Stray Feathers, vii, 1878, p. 23, pl.;

Hume, Stray Feath ix, 1880, p. 121 (Klang, Selangor).

? *Porphyrio poliocephalus*, G., p. 151 (Ratburi and Petchaburi).

Gairdner's record is the only one for the genus in the vicinity of the area now being dealt with. It is just possible that his identification is correct, and that the bird he obtained was really *P. poliocephalus*, which differs from the present form in having the mantle bluish green, not blackish, with, at most, an oily green wash. The distinctness of the present subspecies from the typical Javan form, *P. calvus*, is open to strong doubt; it only differs in having the head ashy grey in the majority of birds, while in the majority of Javan and Sumatran specimens the head is dark: this, however, as Sharpe points out (Cat. Birds Brit. Mus. xxiii, 1894, p. 201) may be largely due to the effects of wear.

We have examined two birds from the vicinity of Chiangmai in Mr. Williamson's collection, which are certainly *P. poliocephalus*, another from Chainat, C. Siam, which is probably *edwardsi* though there is a wash of greenish on the secondaries and mantles. Another

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. .

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

specimen from the same locality is certainly *edwardsi*. A male in freshly moulted plumage from Klong Samrong, nr. Bangkok, shot in November, has the mantle, inner secondaries and tail glossy black, with practically no trace of oily green wash. It may be taken as typical *P. e. edwardsi*. There are, however, too many nominal "species" in the genus.

In the Malay Peninsula the bird is rare and local: it is, however, almost certain to be found in Trang and in the vicinity of the Talé Noi and Talé Sap in Patelung and Singora.

The bird of Malacca has been described and named *Porphyrio viridis* by Bebbie—a matter hitherto overlooked ("The Malayan Peninsula," 1834, p. 515). We cannot say, for lack of sufficient material, whether the name must be accepted.

PODICIPEDIDAE.

GREBES.

44. *Podiceps fluviatilis philippensis* (Bonn.).

Colymbus philippensis, Bonnat, Tabl. Enceyl. Méth. i, (1790), p. 58, pl. 46, fig. 3.

Podiceps philippensis, D., p. 80 (Patelung).

Podiceps albipennis, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 42 (Central and S. E. Siam).

3 ♂, 4 ♀ *hyem.* Koh Lak, S. W. Siam, 7 April, 1919. (Nos. 5124-8, 5143, 5145).

"Iris lemon; lower mandible cream, upper mandible black, tomentum pale yellow, culmen black, base of bill pale green; feet dark sage green."

Total length ♂, 238, 275, 240; ♀, 233, 238, 243, 252; wing ♂, 107, 101, 109; ♀, 103, 102, 103, 103; tarsus ♂, 34, 32, 34; ♀, 35, 32, 32, 33; bill from gape ♂, 26.5, 30, 30; ♀, 26.5, 28.5, 26, 28 mm.

These birds, which are all in non-breeding plumage, are not typical *P. f. philippensis*; two specimens (Nos. 5125-5126) show an approach to *P. capensis* (of which *P. albipennis* is a synonym)

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

in the greater extent of white on the inner primaries and secondaries. The same is the case in a female in breeding plumage in Mr. Williamson's collection from Chantabun. Grant (Cat. Birds Brit. Mus. xxvi (1898), pp. 512-514) has noted the same tendency in birds from Burma and Luzon.

Our men found this Grebe very common on a shallow pond on the edge of a swamp near the coast, together with two species of Parridae.

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| A. Hume & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905. |
| B. Müller, Die Ornis der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i. | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

LARIDAE

GULLS AND TERNS.

1	{ Bill much compressed, knife-like	<i>Rhynchops</i> (extra limital).	2
	{ Bill normal .. .. .	.. .. .
2	{ Upper mandible longer than the lower	<i>Larus brunicephalus</i> .	3
	{ Mandibles of equal length .. .. .	.. .. .
3	{ Plumage dark above and below : outermost tail feather not the longest	<i>Anous stolidus</i> .	4
	{ Plumage not dark below : outermost tail feather the longest .. .. .	.. .. .
4	{ Tarsus long, exceeding middle toe and claw	<i>Gelochelidon anglica</i> .	5
	{ Tarsus short, less than middle toe and claw .. .. .	.. .. .
5	{ Bill very stout, tail less than 1/3 the wing	<i>Hydroprogne caspia</i> .	6
	{ Bill normal, tail 1/2 the wing or more .. .. .	.. .. .
6	{ Tail almost square, the feathers rounded .. .. .	.. .. .	7
	{ Tail forked, the feathers pointed .. .. .	.. .. .	8
7	{ Larger, bill blood-red in breeding plumage : tail grey in non-breeding plumage	<i>Hydrochelidon hybrida</i> .	
	{ Smaller, bill dull red in breeding plumage : tail white in non-breeding plumage	<i>H. leucoptera</i> .	
8	{ Tail long, exceeding 3/4 the wing	<i>Scena scena</i> .	9
	{ Tail shorter, less than 2/3 the wing .. .. .	.. .. .
9	{ Mantle and back sooty brown	<i>Sterna anaetheta</i> .	10
	{ Mantle and back grey .. .. .	.. .. .
10	{ Large, wing over 11.5 inches .. .. .	.. .. .	12
	{ Medium, wing not more than 11 inches .. .. .	.. .. .	15
	{ Small, wing less than 8 inches .. .. .	.. .. .	11
11	{ Larger, bill greenish	<i>S. bergii pelicanoides</i> .	
	{ Smaller, bill orange or yellow .. .. .	.. .. . <i>S. media</i> .	
12	{ Whole crown always white	<i>S. sumatrana</i> .	
	{ Crown black or partially black .. .. .	.. .. .	13
13	{ Feet blackish	<i>S. longipennis</i> .	
	{ Feet reddish .. .. .	.. .. .	14
14	{ Inner webs of primaries edged with white to the tips : bill red : feet brighter	<i>S. dougalli</i> .	
	{ Inner webs of primaries not edged with white to the tips : bill black : feet duller	<i>S. fluviatilis tibetana</i> .	
15	{ Shafts of all primaries white	<i>S. sinensis</i> .	
	{ Shafts of two outer primaries brown	<i>S. minuta</i> .	
	{ Shafts of three outer primaries brown	<i>S. saundersi</i> .	

NOTE. In this Order we have not, as a rule, attempted to attach rigorously correct subspecific names to the various forms. This is almost impossible without comparative material from all parts of the Oriental and Australasian regions, which is not in our possession.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

45. *Larus brunneicephalus* Jerd.

Larus brunneicephalus, Jerdon, Madras Journ. L. S. xii, 1840, p. 25 (Madras); A, p. 491 (south to Tongka); J., p. 148 (Inner Gulf of Siam); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 36 (Inner Gulf of Siam).

On the western side of Peninsular Siam only doubtfully recorded as a rare straggler as far south as Junk Seylon in winter. Apparently common in winter on the eastern side in the Inner Gulf of Siam and as far south as Koh Lak. Quite unknown from Malayan waters.

46. *Hydrochelidon hybrida* (Pall.).

Sterna hybrida, Pall., Zoogr. Rosso-Asiat. ii, p. 338 (1811, Volga).
Hydrochelidon hybrida, Williamson, Journ. Nat. Hist. Soc. Siam, i, 1914, p. 48 (Bangkok); I., p. 147 (1916); Williamson, op. cit. iii, 1918, p. 37 (Bangkok).

The occurrence of the Whiskered Tern in the area rests for the present on Gyldenstolpe's bird from Koh Lak, shot in December, and therefore probably in winter plumage. This bird had a wing of 220 mm., which, though large for *H. leucoptera*, is small for *H. hybrida*, so that the identification yet remains to be fully confirmed. The species is, however, abundant in the vicinity of Bangkok, and in east and central Siam, whence we have examined many specimens, both in breeding and winter plumage, in the collection of Mr. W. J. F. Williamson.

47. *Hydrochelidon leucoptera* (Meisn. & Schinz).

Sterna leucoptera, Meisner & Schinz, Vög. Schweiz, 1815, p. 264 (Lake Geneva).
Hydrochelidon leucoptera, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 37 (nr. Bangkok).

All specimens of this genus that we possess from the Straits of Malacca, north to Penang and the Siamese boundary, are this species which, in immature and winter plumage, can only be distinguished from the preceding by its smaller size, white tail and tail-coverts, and markedly shorter bill. We have seen two specimens from Bangkok in young and winter plumage, shot in April and

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| A. Hume & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905 |
| B. Müller, Die Ornith. der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i. | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

October, which we believe to be this form, but pending the receipt of adult birds in breeding plumage the identification is doubtful. Immature and winter plumage specimens of *H. hybrida* appear to have the crown more streaked than in this species.

48. *Hydroprogne caspia* (Pall.).

Sterna caspia, Pall., Nov. Comm. Petrop. xiv, i, p. 582, tab. xxii, fig. 2 (1770).

Hydroprogne caspia, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 37 (Tachin, Inner Gulf of Siam).

The birds obtained by Williamson at Tachin are the only records for this species from Siam. The bird is the largest of all the terns, with a wing exceeding 400 mm. (16 inches), and with an exceptionally heavy bill.

49. *Gelochelidon anglica* (Mont.).

Sterna anglica, Mont., Orn. Diet. Suppl. 1813, fig. (Sussex); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 62 (Inner Gulf of Siam).

Gelochelidon anglica, A., p. 491 (Mergui); H. Saunders, Cat. Birds Brit. Mus. xxv, 1896, p. 31., spm. s' (Pakchan).

Very common in the Straits of Malacca in the winter months: we have not ourselves met with it in Siamese waters.

50. *Seena seena* (Sykes).

Sterna seena, Sykes, P. Z. S. 1832, p. 171 (Deccan); I., p. 148 (Koh Lak).

Gyldenstolpe's record of this river tern from Koh Lak is the most southerly one. The species is not found in the Straits of Malacca, and Kelham's records (Ibis, 1882, p. 201) are referable to *Sterna media* Horsf. We have examined his specimens, which are preserved in the Raffles Museum, Singapore.

51. *Sterna bergii pelecyanoides* (King).

Sterna cristata, Steph. in Shaw's Gen. Zool. xiii, Pt. 1, 1825, p. 146 (China).

Sterna pelecyanoides, King, Surv. Inter trop. and West Coast Australia, Vol. 2, 1827, p. 422 (Torres Straits).

Sterna bergii, A., p. 493 (Bokpyin); C. ii, p. 428; E., p. 11 (Terutau); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 83 (Koh Rin and Koh Chuan, Inner Gulf of Siam).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Thalasseus bergii pelecyanoides, J., p. 143 (Terutau).

The Malayan material in our possession, though larger than that in the hands of Mr. Oberholser, is not sufficient to enable us satisfactorily to discriminate the local races of these sea-terns, our area being apparently the meeting places of three nominal forms, viz., *S. b. cristatus*, *S. b. edwardsi* and *S. b. pelecyanoides*, but the balance of probability is that the birds on the eastern side of the Peninsula will prove to be *S. b. cristatus*, while, according to Oberholser, those from the west should be *S. b. edwardsi*. We are unable to separate Terutau and Langkawi birds from Tioman and Rhio Island specimens which, *fide* Oberholser, should be *S. b. pelecyanoides* King.

We have examined nine fully adult birds in fresh breeding plumage from various islands in the Inner Gulf of Siam. Eight males have the wing 334–360 mm. and a female 335, the median being 347 mm. On the whole, therefore, we refer all Malayo-Siamese birds to the Australian *S. b. pelecyanoides*.

Sterna media Horsf.

Sterna media, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 198 (Java); Howard Saunders, Cat. Birds Brit. Mus. xxv, 1896, p. 86.

This large tern, which is easily recognised by its somewhat slender, yellow-orange bill, is sparingly distributed in the Straits of Malacca. We have obtained it north of Penang, and there is little doubt that it will be found on the coast of west Siam: though it is only doubtfully recorded from the Tenasserim coast. It will not, in all probability, be found on the eastern side.

52. *Sterna fluviatilis tibetana* Saunders.

Sterna tibetana, Saunders, P. Z. S. 1876, p. 649 (Thibet); Hume, Stray Feath. viii, 1879, p. 158 (Tongka).

Sterna longipennis, Saunders, Cat. Birds Brit. Mus. xxv, 1896, p. 60, spms. u., v.

Sterna fluviatilis tibetana, J., p. 142 (Terutau).

Terns of this group are common in the Straits of Malacca, and have been referred indifferently to the common European tern

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

and to *S. longipennis* Nordm., a somewhat closely related species breeding in North China, Kamschatka, etc., and wintering in the south. All the birds found in these waters are, however, either immature or in winter plumage, and it is impossible to identify them with any great certainty.

The balance of probability is in favour of their belonging to the Asiatic race, which breeds in Tibet, etc., and winters in the south. The bird has not been found on the East Coast of Siam.

53. *Sterna dougalli* Mont.

Sterna dougalli, Mont., Orn. Dict. Suppl. 1813. fig. (no pagination—Scotland); A., p. 492 (Laynah Creek); H., p. 142 (Koh Pennan); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 63 (Koh Rin and Koh Phai, Inner Gulf of Siam).

The Roseate Tern has been much divided and many names are available for eastern and southern races, but we do not here attempt precisely to assign the Siamese specimens to any subspecies.

Two birds obtained by ourselves on Koh Pennan on 26th May, 1913, in freshly moulted full breeding plumage, have the tarsi and toes orange-red, the claws blackish, and the bills entirely black with no trace of red whatever. Wing ♂, 228; ♀, 213 mm.

On the other hand, three males from Pulau Jemor, Aroa Ids., Straits of Malacca, shot on 2nd. August, 1906, also in full breeding plumage, have the tarsi, toes and claws orange-red, and the bills also orange-red with no trace whatever of black. Wing ♂, 214, 217, 230 mm.

54. *Sterna sumatrana sumatrana* Raffles.

Sterna sumatrana, Raffles, Trans. Linn. Soc. xiii, 1821, p. 329 (immature—Sumatra); A., p. 493 (Tenasserim).

Sterna melanauchen, Temminck, Pl. Col. 1827 (Coast of Celebes); H., pp. 18, 142 (Koh Pennan, Bandon-Bight); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 63 (Inner Gulf of Siam).

This beautiful tern, which in life has a delicate rosy flush over the under surface like in *S. dougalli*, is a species frequenting rocky islands and keeping as a rule well out to sea. It is common

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

on both coasts of Peninsular Siam and breeds there in May and June, laying a single egg on ledges of bare rock often only three or four feet above high tide.

There is unfortunately little doubt that *S. sumatrana* Raffles is founded on a half grown bird of this species, and the name will therefore have to replace the widely known *S. melanauchen*.

Sterna anaetheta anaetheta Scop.

Sterna anaetheta, Scop., Del. Flor. et. Faun. Insubr. Pt. 2, 1786, p. 92 (Panay); A., p. 493 (Mergui); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 63; id. op. cit. iii, 1918, p. 85 (Inner Gulf of Siam).

Probably fairly common, well out to sea, along both coasts of Peninsular Siam. It is common in the Straits of Malacca and breeds in the Aroa Ids. In the Tioman Archipelago, off the coast of Pahang, it is also a breeding bird.

Sterna fuliginosa (Gm.), which differs from the above in its larger size and broader white frontal band and superciliaries, is recorded from Petchaburi by Parrot (Verhandl. Orn. Ges. Bayern, 8, 1908, p. 127). It is recorded from Pegu and Tounghoo by Saunders (Cat. Birds Brit. Mus. xxv, 1896, p. 110) and may possibly be found in the Gulf of Siam. We have seen no specimens referable to it from our area.

55. *Sterna sinensis* Gm.

Sterna sinensis, Gm., Syst. Nat. i, 1788, p. 60 (China); D., p. 80 (Patelung); E., p. 119 (Patani); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 37 (S. W. Siam).

These small terns, except in summer plumage, are extremely difficult to separate, and it is by no means certain that the alleged differences are constant. The present form has the shafts of the outer primaries white, and the size larger, the wing as a rule exceeding 180 mm. In the Malay Peninsula it breeds on the sandbanks on the rivers of the east coast for some distance up from their mouths.

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornis der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

We have examined three specimens in breeding plumage from Koh Lak dated end of June, and three from Hua Hin, also in June, in Mr. W. J. F. Williamson's collection. Wing 174-180 mm. The black up the bill is a somewhat variable character, and in one bird from Hua Hin is practically absent.

***Sterna minuta* Linn.**

Sterna minuta, Linn., Syst. Nat. i, 1776, p. 228 (Europe).

Sterna sinensis, Hume, Stray Feathers, viii, 1879, p. 160 (Klang).

Sterna gouldi, Hume, op. cit. ix, 1880, p. 131.

Though not actually recorded as yet, the European Little Tern is certain to be found in winter on both coasts of Siam; we have it from the coast of Selangor. From *S. sinensis*, in winter plumage, it can be separated by its dark shafts to the two outer primaries and its smaller size.

***Sterna saundersi* Hume.**

Sterna saundersi, Hume, Stray Feathers v, 1877, pp. 324-6 (Karachi).

This eastern form can be recognized by having the shafts of the three outer primaries dark, and the wing about 170 mm. It is met with in fair numbers in the Straits of Malacca during the winter months, and will quite possibly be found on both Siamese coasts, though it has not as yet been recorded from the area.

***Anous stolidus* (Linn.).**

Sterna stolidus, Linn., Syst. Nat. i, 1766, p. 227 (American Seas).

Anous stolidus, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1919, p. 88 (Koh Chuan, Inner Gulf of Siam).

The only Siamese locality for this cosmopolitan tern is the above island in the Inner Gulf of Siam, off the S. E. coast, where it was found breeding by Williamson in May 1918. It is extremely rare in the Straits of Malacca, but we have one specimen from Pulau Jarak, off the Dindings, shot by Mr. Seimund on November 16th, 1919, on which date large numbers were seen.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

LIMICOLÆ.

PLOVERS, WADERS, SNIPE, ETC.

1	{ Nostrils impervious, form swallow-like ..	<i>Glareola p. maldivarum.</i>	2
	{ Nostrils pervious .. ..	.. ..
2	{ Eye very large, bill extremely stout and heavy ..	.. ..	3
	{ Eye not specially large, bill not specially heavy ..	.. ..	5
3	{ Toes three .. ..	.. ..	4
	{ Toes four	<i>Dromas ardeola.</i>	
4	{ Bill longer than head; plumage not strongly streaked ..	<i>Orthorhamphus m. scommophorus.</i>	
	{ Bill shorter than head; plumage strongly streaked ..	<i>Oedinenus æ. indicus.</i>	
5	{ Toes and claws enormously elongated ..	.. ..	6
	{ Toes and claws not specially elongated ..	.. ..	7
6	{ With frontal lappets; primaries without terminal processes ..	<i>Metopidius indicus.</i>	
	{ With no frontal lappets; primaries with terminal processes ..	<i>Hydrophasianus chirurgus.</i>	
7	{ With the nasal groove not extending beyond half the length of the culmen ..	.. ..	8
	{ With the nasal groove extending over the greater part of the upper mandible ..	.. ..	19
8	{ Bill not much longer than head ..	.. ..	9
	{ Bill very much longer than head ..	<i>Himantopus himantopus.</i>	
9	{ With the bill not markedly swollen at the tips of mandibles ..	<i>Arenaria interpres.</i>	
	{ With the bill markedly swollen at the tips of both mandibles ..	.. ..	10
10	{ With a spur or knob at the angle of the wing ..	.. ..	11
	{ With no spur or knob at the angle of the wing ..	.. ..	12
11	{ With a wattle in front of the eye ..	<i>Sarcogrammus i. atronuchalis.</i>	
	{ With no wattle in front of the eye ..	<i>Hoplopterus ventralis.</i>	
12	{ With a hind toe	<i>Squatarola helvetica.</i>	
	{ With no hind toe .. ..	.. ..	13
13	{ Plumage above spotted with yellow ..	<i>Charadrius plumalis fulvus.</i>	
	{ Plumage above not spotted with yellow ..	.. ..	14
14	{ No complete white ring round the neck ..	.. ..	15
	{ A complete white ring round the neck ..	.. ..	17
15	{ Bill stout; shaft of 3rd primary partly white ..	.. ..	16
	{ Bill slender; shaft of 3rd primary dark throughout; wing 6.5 inches	<i>Aegialitis veredus.</i>	
16	{ Larger; bill from gape 1.0; wing 5.5 inches ..	<i>Aegialitis geoffroyi.</i>	
	{ Smaller; bill from gape 0.75; wing 5.0 inches ..	<i>Aegialitis mongolus.</i>	
17	{ A black or fuscous band across the fore-breast ..	<i>Aegialitis dubius curonicus.</i>	
	{ No black or fuscous band across the fore-breast ..	.. ..	18
18	{ Bill larger	<i>Aegialitis alexandrinus dealbatus.</i>	
	{ Bill smaller	<i>Aegialitis a. peroni.</i>	

19	{ Toes markedly webbed	20
	{ Toes practically free to the base	34
20	{ Bill long, much exceeding the tail	21
	{ Bill moderate, not much if at all exceeding the tail	25
21	{ Bill strongly curved	22
	{ Bill almost straight	23
22	{ Smaller; top of head with a single median stripe	<i>Numenius ph. phaeopus.</i>
	{ Larger; top of head much striped	<i>Numenius a. lineatus.</i>
23	{ Bill widened and pitted at the tip	<i>Macrorhamphus g. taczanowskii.</i>
	{ Bill not widened or pitted at the tip	24
24	{ Tail barred	<i>Limosa limosa melanuroides.</i>
	{ Tail not barred	<i>Limosa lapponica novae-zelandiae.</i>
25	{ Bill from gape not less than the tarsus or only slightly less	26
	{ Bill from gape less than tarsus	33
26	{ Bill straight or slightly curved downwards	27
	{ Bill curved upwards	31
27	{ Tarsus much longer than middle toe and claw	29
	{ Tarsus equal to, or shorter than, middle toe and claw	28
28	{ Wing over 5 inches; rump white	<i>Totanus ochrophus.</i>
	{ Wing under 5 inches; rump like the back	<i>Tringoides hypoleucos.</i>
29	{ Legs red or reddish	30
	{ Legs sage-green	<i>Totanus stagnatilis.</i>
30	{ Secondaries pure white	<i>Totanus calidris.</i>
	{ Secondaries barred brown and white	<i>Totanus fuscus.</i>
31	{ Bill very slender	<i>Terekia cinerea.</i>
	{ Bill much stouter	32
32	{ Inner and middle toes united at the base by a membrane; bill stout; tarsus less than 2 inches	<i>Pseudoglossitis guttifer.</i>
	{ Inner and middle toes hardly united at the base by a membrane; bill more slender; tarsus more than 2.25 inches	<i>Glossitis nebularius.</i>
33	{ Wing 6.5 inches and over; sexes markedly different in breeding plumage	<i>Paroncella pugnax.</i>
	{ Wing less than 5.5 inches; sexes practically alike in breeding plumage	<i>Rhyacophilus glareola.</i>
34	{ Eyes not placed far back in head	35
	{ Eyes placed far back in head	40
35	{ Bill from gape not longer than tarsus	36
	{ Bill from gape longer than tarsus	38
36	{ Only first primary with shafts white	37
	{ All primaries with shafts partly white	<i>Limonites minuta.</i>
37	{ All tail feathers pale brown; middle toe 0.9 inch	<i>Limonites m. subminuta.</i>
	{ Outer tail feathers pure white; middle toe 0.75 inch	<i>Limonites temminckii.</i>
38	{ Bill straight; wing about 7 inches	<i>Tringa tenuirostris.</i>
	{ Bill decurved at tip; wing less than 6 inches	39
39	{ Bill narrow; wing about 5 inches	<i>Ancylolilus subarquatus.</i>
	{ Bill broad; wing about 4 inches	<i>Limicola platyrhyncha.</i>

40	{ Bill decurved, not pitted at tip; sexes dissimilar ..	<i>Rostratula capensis</i> .	41
	{ Bill almost straight, pitted at tip; sexes similar ..	.. ..
41	{ Black markings on head and neck longitudinal ..	.. ..	42
	{ Black markings on head and neck transverse ..	<i>Scolopax rusticola</i> .	
42	{ Distance between tips of shortest secondaries and longest primary less than 2 inches; tail feathers 18 ..	<i>Gallinago nemoricola</i> .	43
	{ Distance between tips of shortest secondaries and longest primary more than 2 inches ..	.. ..
43	{ Outer tail feathers not narrowed, and not exceeding 16 ..	<i>Gallinago gallinago</i> .	44
	{ Outer tail feathers narrowed, exceeding 18 ..	.. ..
44	{ Tail feathers 26; outer 8 on each side very narrow ..	<i>Gallinago sthenura</i> .	
	{ Tail feathers 20; outer 6 on each side rather narrow ..	<i>Gallinago megala</i> .	

56. *Glareola pratincola maldivarum* Forst.

Glareola (Pratincola) maldivarum, Forster, Faun. Ind., p. 11, 1795 (Maldives); I., p. 142 (Koh Lak).

Glareola orientalis, A., p. 454.

♂. Koh Lak, S. W. Siam. 6 April, 1919. (No. 5110).

"Iris dark; bill black, crimson at base; feet greyish black."

Total length 228; wing 189; tail 82; tarsus 37; bill from gape 25.5 mm.

Dromas ardeola Payk.

Dromas ardeola, Paykull, Kungl. Vet. Akad. Handl. Stockh. xxvi, 1805, pp. 182, 188, tab. 8 (India); Robinson, Journ. Fed. Malay States Mus. v, 1913, p. 17 (Pulau Pintu Gedong, Selangor).

The Crab-Plover has once been obtained in the Straits of Selangor and may occur on the west coast of Siam. In colour the bird is mainly black and white, and may be recognised by the characters given in the key.

57. *Orthorhamphus magnirostris scommophorus* Oberholser. *

Esacus magnirostris, A., p. 459 (Mergui Archipelago).

Orthorhamphus magnirostris scommophorus, Oberholser, Proc. U. S. Nat. Mus. 55, 1919, p. 133 (Tambelan Ids.).

♂ ad. De Lisle Id. (Koh Piam), W. Siam. 19 February, 1919. (No. 4128).

* We use Oberholser's name, though, as Mathews and Iredale point out (Man. Birds Australia, i, 1921, p. 118), its application is based on a misconception due to an error in labelling.

A. Hume, & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fascienli Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gardner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

"Iris yellow-brown; bill black, yellowish green at base; tarsi pale wax-yellow, toes more greyish slate."

Total length 532; wing 272; tail 128; tarsus 88; bill from gape 85 mm.

This Stone-Plover has not been recorded previously from Siam. It has been seen or obtained on several occasions in the Mergui Archipelago, of which De Lisle Id. is practically one. The present bird was one of a pair feeding on the edge of a reef at low tide.

This form is stated to differ from the typical Australian race only in its slightly shorter bill. No large series appear to have been examined.

Oedicnemus oedicnemus indicus (Salvad.).

Oedicnemus indicus, Salvad., Atti Soc. Ital. Sci. Nat. viii, 1866, p. 380 (Himalayas).

Oedicnemus scolopax, C. ii, p. 356; Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 33 (near Bangkok).

The Indian Stone-Curlew will not improbably be found on dry plains in S. W. and Peninsular Siam. It can be separated from the preceding by its relatively smaller and shorter bill and by its more streaked and variegated plumage.

58. *Metopidius indicus* (Lath.).

Parra indica, Latham, Ind. Orn. ii, 1790, p. 765 (India).

Metopidius indicus, G., p. 152 (Ratburi and Petchaburi).

♂, ♀. Koh Lak, S. W. Siam. 7 April, 1919. (Nos. 5142, 5144).

"Iris dark; bill yellow, base of upper mandible, from nostrils, and shield dull olive-green; feet pale red-green, tibia more yellowish".

Total length ♂, 270; ♀, 290; wing ♂, 162; ♀, 173; tail ♂, 43; ♀, 43; tarsus ♂, 70; ♀, 74; bill from gape ♂, 32; ♀, 37 mm.

These birds do not appear to be very young—the feathers of the upper surface having no sandy margins—but the under surface is

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| <p>I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.
 J. Robinson, Journ. F. M. S. Mus. vii, 1917.
 K. Kloss, <i>Ibis</i>, 1918.
 L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.</p> | <p>M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).
 Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).
 M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).</p> |
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uniform whitish, strongly washed with buff on the breast. The crowns are chestnut, streaked with black, and the frontal wattles are smaller than in dark bellied birds. Possibly they represent a non-breeding, as distinct from a juvenile, plumage. Ten specimens in Mr. Williamson's collection from various parts of Siam, dated November to April, all have the under surface black.

59. *Hydrophasianus chirurgus* (Scop.).

Tringa chirurgus, Scop., Del. Flor. et Faun. Insubr. ii, 1786, p. 92 (Philippines).

Hydrophasianus chirurgus, G., p. 152 (Ratburi and Petchaburi); M.L., p. 38 (Krabin, C. Siam).

♀. Koh Lak, S. W. Siam. 6 April, 1919. (No 5211).

"Iris dark; bill bluish sea-green, darker at base; feet sea-green".

Total length 213; wing 215; tail 63; tarsus 52.5; bill from gape 32 mm.

This Jacana, with white lower plumage (winter), was shot on a shallow lagoon together with grebes and the preceding species. It has not hitherto been recorded from Siam, with the exception of Gairdner's and Stuart Baker's specimens. Mr. W. J. F. Williamson informs us, however, that he found the bird in considerable numbers at Klong Rangsit, a little to the north of Bangkok, in January 1916, on flooded ground largely covered with reeds and coarse grasses. In the Malay Peninsula it is widely distributed but extremely rare.

60. *Himantopus himantopus* (Linn.).

Charadrius himantopus, Linn., Syst. Nat. i, 1766, p. 255 (Europe).

Himantopus himantopus, L., p. 145 (between Ratburi and Koh Lak).

Himantopus candidus, Williamson, Journ. N. H. Soc. Siam, iii, 1918, p. 35 (Meklong); M. L., p. 39 (Paklat, nr. Bangkok).

The above records by Gyldenstolpe, Williamson and Stuart Baker are the sole ones from the Kingdom of Siam*. The bird has

*We believe this bird to be fairly common in suitable localities, at all events in the central parts of the country. It is well-known to the Siamese and has a distinctive name, *Nok tin thian* (นกตีนเทียน).—Eds.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Borneo, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

been obtained twice in the Peninsula, in Jelebu and in Singapore Island.

61. *Arenaria interpres* (Linn.).

Tringa interpres, Linn., Syst. Nat. i, 1766, p. 248 (Europe).

Streptopus interpres, E., p. 119 (Patani Coast).

Arenaria interpres, J., p. 138 (Koh Muk, Trang).

The above specimens, from the coasts of Patani and Trang, are the only ones recorded from Siam. In the Malay Peninsula it is sparingly distributed along the western coast from August to April.

62. *Sarcogrammus indicus atronuchalis* Blyth.

Sarcogramma atrogularis, Blyth, Journ. Asiat. Soc. Bengal, xxxi, 1862, p. 345 (Toung-hoo).

Lobicanellus atronuchalis, Blyth in Jerdon's Birds India, iii, 1864, p. 648 (Burma); A., p. 457; B., p. 82 (Salanga); C. ii, p. 374.

Sarcogrammus atronuchalis, F., p. 11 (Trang); G., p. 152 (Ratburi and Petchaburi).

Sarcogrammus indica atronuchalis, L., p. 146 (Koh Lak); J., p. 138 (Terutau); K., p. 85 (Koh Lak); L., p. 91 (Ghirbi and Pulau Panjang).

♀. Koh Lak, S. W. Siam. 10 April, 1919. (No. 5223).

"Iris dark; tip of bill black, base, lappets and eye-ring coral red; feet pale lemon-yellow."

Total length 315; wing 215; tail 114; tarsus 71; bill from gape 34 mm.

This Wattled Plover is exceedingly common in open spaces over the whole of the area, and also in suitable localities over the rest of the Malay Peninsula down to Johore; met with as a rule in small flocks up to seven or eight individuals.

63. *Hoplopterus ventralis* (Wagl.).

Charadrius ventralis, Wagl., Syst. Av. Charadrius, p. 59, sp. ii, (1827).

Hoplopterus ventralis, A., p. 457 (Pakchan); C. ii, p. 375; F., p. 11 (Trang); G., p. 152 (Ratburi and Petchaburi).

Probably rare and attaining its southern limit in Trang. Specimens from that locality, collected by Dr. W. L. Abbott, are in

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

the United States Natural History Museum, while the species was seen but not procured by us in the same district in 1909.

64. *Squatarola helvetica* (Linn.).

Tringa helvetica, Linn., Syst. Nat. i, 1766, p. 250. (Switzerland).

Squatarola squatarola, L., p. 143 (Koh Lak).

Squatarola helvetica, J., p. 138 (Koh Muk, Trang).

The Grey Plover is probably not uncommon during the winter months in the west coast of Siam, as it is fairly abundant further south: on the east coast it may be expected to be rarer.

65. *Charadrius pluvialis fulvus* Gm.

Charadrius fulvus, Gm., Syst. Nat. i, 1788, p. 687 (Tahiti); A., p. 455 (Pakchan); C. ii, p. 364; G., p. 152 (Ratburi and Petch-aburi.)

Charadrius dominicus, D., p. 79 (Patelung); E., p. 116 (Patani); K., p. 85 (Koh Lak).

Charadrius longipes, B., p. 82 (Junk Seylon).

Charadrius dominicus fulvus, L., p. 143 (Koh Lak).

♂. Tapli, Pakchan, Peninsular Siam. 8 March, 1919. (No. 4493).

"Iris dark; bill greenish black, paler at base; feet pale greyish green."

Total length 244; wing 101; tail 65; tarsus 40; bill from gape 28 mm.

Common in the winter months.

Aëgialitis veredus (Gould).

Charadrius veredus, Gould, P. Z. S., 1848, p. 38 (Northern Australia).

Charadrius asiaticus, Finsch, Ibis, 1872, p. 144 (Saigon).

Though there are no actual records of the occurrence of the Eastern Dotterel in Siam, we have inserted the species in the key, as it has been recorded from several places in the Malay Peninsula and from Cochin-China and is certain to be met with in Siam in the winter months.

66. *Aegialitis geoffroyi* (Wagl.).

Charadrius geoffroyi, Wagl., Syst. Av., Charadrius, p. 61, No. 19, 1827 (Java); K., p. 85 (Koh Lak).

Cirrhipidesmus geoffroyi, B., p. 83.

Ochthodromus geoffroyi, L., p. 143 (Koh Lak).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♀. Koh Lak, S. W. Siam. 7 April, 1919. (No. 5139).

"Iris dark; bill black; feet pale bluish slate, tinged green."

The Sand-Plover occurs sparingly throughout the Malay Peninsula, and probably Siam, though not nearly as common as the following.

67. *Aegialitis mongolus* (Pall.).

Charadrius mongolus, Pall., Reis. Russ. Reichs, iii, 1776, p. 700 (Russia).

Aegialitis mongolus, B., p. 455; C. ii, p. 368; E., p. 118 (Patani); I., p. 143 (Koh Lak).

Ochthodromus pyrrhotorax, F., p. 12 (Terutau); H., p. 142 (Koh Pennan); J., p. 139 (Koh Muk).

Cirrepidesmus geoffroyi, B., p. 83 (Junk Seylon).

2 ♀. Koh Lak, S. W. Siam. 7 April, 1919.

"Iris black; bill black; feet pale greenish grey with a tinge of blue."

Total length 182, 182; wing 128, 120; tail 48, 45; tarsus 33.5, 32.5; bill from gape 22, 20.5 mm.

Two races of this Sand-Plover—a western one, *Ae. pyrrhotorax*, and the present one—are supposed to occur in our area: the majority of specimens should perhaps be referred to the former, which is stated to have a slightly longer tarsus. It is, however, practically impossible to discriminate with any certainty individual birds in winter plumage, and we have therefore retained all the local birds under the older name.

68. *Aegialitis dubius curonicus* (Gm.).

Charadrius curonicus, Gm., Syst. Nat. i, pt. 2, 1788, p. 692 (Curonia).

Aegialitis curonicus, A., p. 456 (Pakchan).

Aegialitis minutus, A., p. 456 (Assoon).

Aegialitis fluriatilis, B., p. 83 (Junk Seylon).

Aegialitis dubia, C. ii, p. 370; E., p. 118 (Patani); G., p. 152 (Ratburi and Petchaburi).

Aegialitis jerdoni, C. ii, p. 371.

Aegialitis dubius curonicus, Hartert and Jackson, Ibis, 1915, p. 533.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam. iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919.

(second part).

M.I. Baker, Journ. N.H. Soc. Siam, iv, 1920.

(third part).

2♂. Koh Lak, S. W. Siam. 3, 4 April, 1919. (Nos. 5007, 5044).

"Iris dark hazel; eye lappet chrome or pale chrome; bill black, base of lower mandible yellow; feet dirty flesh, joints greyish, toes black."

Total length 170, 172; wing 108, 148; tail 64, 63; tarsus 23.5, 25; bill from gape 13, 16 mm.

These specimens are in full breeding plumage, and on that consideration, and from the date on which they were obtained, should probably be referred to the tropical resident race, *Ae. d. jerdoni*, Legge, Proc. Zool. Soc. 1880, p. 39 (Ceylon and Central India), if that race is to be kept distinct, as it probably should be. The northern race should also occur in winter on migration, but is difficult to distinguish in the series before us.

69. *Aegialitis alexandrinus dealbatus* Swinh.

Aegialitis dealbatus, Swinh., P. Z. S. 1870, p. 138 (South Coast, China).

Aegialitis alexandrina, I., p. 145 (Koh Lak).

Charadrius alexandrinus dealbatus, Hartert and Jackson, Ibis, 1915, p. 528; K., p. 85 (Koh Lak).

Aegialitis cantianus, A., p. 456 (Mergui).

All specimens of this Plover that we have seen from Siam and from the Malay Peninsula in winter have large bills, from 15—19 mm. measured on the bare part of the culmen, and therefore must be considered to belong to the Chinese and Hainan race in winter quarters. We have no evidence that the typical *Ae. a. alexandrinus* (i. e., the bird with a small bill) comes as far south as the Malay Peninsula, though our series is not large. On the other hand, we think it probable that many specimens which are really females or young examples of the following race have been confused with the present form or with *Ae. a. alexandrinus*.

Kloss notes the soft parts as, "Iris dark; bill black; legs stone-grey or yellowish grey; feet grey-black."

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornis der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

70. *Aegialitis alexandrinus peroni* (Bp.).

Charadrius peroni, Bp., Compt. Rend. xlii, 1856, p. 417 (Java).

Aegialitis alexandrinus, II., p. 142 (Koh Penman and Koh Samui).

Aegialitis peroni, Vaughan and Jones, Ibis, 1913, p. 362 (South East China); I., p. 144 (Koh Lak).

Aegialitis alexandrinus peroni, J., p. 139 (Pulau Telibun, Trang).

We have from the Malay Peninsula and various islands off the coast a considerable series of a small plover, with the wing always below 100 mm., and which therefore cannot, apart from other considerations, be referred to any of the usually recognized races of *Ae. alexandrinus*. Our series has been compared with a large number of specimens of true *Ae. peroni* from Borneo, with which they agree. We have little doubt that many specimens, especially females or immature birds, have been recorded as *Ae. alexandrinus*, although really this form which, in any event, can only be regarded as a resident tropical race diminished in size and intensified in colour precisely analogous with *Ae. c. jerdoni*. Lieut. R. E. Vaughan and Staff Surgeon K. H. Jones record this form from S. E. China, stating that it arrives from the north from August to November and is resident during the winter months.

71. *Numenius arquatus lineatus* Cuv.

Numenius lineatus, Cuv., Regne. Anim. i, 1829, p. 521; A., p. 450 (Pakehan); Hume, Stray Feath. ix, 1880 (Tongka).

Numenius arquatus, C. ii, p. 412 (Tenasserim Coast); F., p. 12 (Peninsular Siam); I., p. 145 (Koh Lak).

The Curlew is apparently rare and always hard to secure.

**72. { *Numenius phaeopus phaeopus* (Linn.).
 { *Numenius phaeopus variegatus* (Scop.).**

Scolopax phaeopus, Linn., Syst. Nat. i, 1766, p. 243 (Europe).

Tantalus variegatus, Scopoli, Del. Flor. et Faun. Ins. Ubi. ii, 1786, p. 92 (Luzon).

Numenius phaeopus, A., p. 460 (Pakchan); C. ii, p. 411 (Tenasserim coast); F., p. 12 (Peninsular Siam).

Common in large flocks on the western coast in winter: a few specimens found single as late as June. Birds from Siam may be-

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
(third part).

long to either of these forms, which are not very easily distinguished from each other.

73. *Macrorhamphus griseus taczanowskii* (Verr.).

Micropalama taczanowskia, Verreaux, Rev. et Mag. Zool. 1860, p. 206, pl. 14 (Dauria).

Macrorhamphus taczanowskii, Williamson, Journ. N. H. Soc. Siam, ii, 1916, p. 62 (Lakon, Peninsular Siam).

We have a specimen obtained in the Dindings by Mr. R. J. Wilkinson's collectors.

***Limosa limosa melanuroides* Gould.**

Limosa melanuroides, Gould, P. Z. S. 1846, p. 84 (Port Essington); Williamson, Journ. N. H. Soc. Siam, ii, 1916, p. 62 (Inner Gulf of Siam).

No Godwits are common anywhere in our area, but this species is less rare than *L. l. novae-zelandiae*.

74 *Limosa lapponica novae-zelandiae* Gray.

Limosa lapponica var. *novae-zelandiae*, Gray, Voy. Erebus and Terror, Birds, 1846, p. 13.

Limosa novae-zelandiae, Williamson, Journ. N. H. Soc. Siam, ii, 1916, p. 62 (Bandon).

We have only seen one specimen of this species, a male in incipient breeding plumage, from Temerloh, Klang Straits.

75. *Tringoides hypoleucos* (Linn.).

Tringa hypoleucos, Linn., Syst. Nat. i, 1766, p. 250 (Europe).

Tringoides hypoleucos, A., p. 463 (Mergui); B., p. 83 (Salanga Id.); F., p. 13 (Malay Peninsula); L., p. 146 (Gulf of Siam); J., p. 140 (Telibon Id.); L., p. 91 (Ghirbi and Pulau Panjang).

1 ♂, 1 ♀. Koh Lak, S. W. Siam. 3—6 April, 1919. [Nos. 5009, 5103].

Total length ♂, 200; ♀, 200; wing, ♂, 108; ♀, 112; tail ♂, 60; ♀, 62; tarsus ♂, 24.5; ♀, 23; bill from gape ♂, 25; ♀, 28 mm.

"Iris dark; bill greenish black, paler at base; feet greenish grey, yellower at knees."

Of universal distribution, practically throughout the year.

A. Hume, & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

Totanus ochrophus (Linn.).

Tringa ochrophus, Linn., Syst. Nat. i, 1766, p. 250 (Europe).

Totanus ochrophus, Williamson, Journ. Nat. Hist. Soc. Siam, i, 1914, p. 48 (Bangkok); I., p. 145 ("Every part of Siam").

We doubt if this species is anything like as common as stated by Gyldenstolpe, who, it may be observed, did not obtain specimens. We have neither obtained nor seen it from any part of Siam.

We have not sufficient material to express an opinion as to whether the Eastern form, described by Mathews (Austral. Av. Record, i, 1913, p. 188) from Assam as *Tringa ochropus assami*, is really valid.

76. Totanus stagnatilis Bechst.

Totanus stagnatilis, Bechstein, Orn. Taschenb., pt 2, 1803, p. 292, pl.; A., p. 463 (Yea-boo, Moulmein); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 62 (Tachin and Bangplaso, Inner Gulf of Siam).

1 ♀. Koh Lak, S. W. Siam. 4 April, 1919. [No. 5036].

Total length 252; wing 147; tail 70; tarsus 52; bill from gape 43 mm.

"Iris dark; bill black, paler at base; feet yellowish sage:

The above bird is in breeding plumage, with black patches in the feathers of the upper surface. It is a very rare bird throughout our area.

The Eastern birds have been separated under the name *Totanus stagnatilis horsfieldi* 1 (Sykes).

77. Totanus calidris (Linn.).

Scolopax calidris, Linn., Syst. Nat. i, 1766, p. 245 (Europe).

Totanus calidris, A., p. 464 (Pakchan); I., p. 145 (Gulf of Siam); J., p. 140 (Koh Muk, Trang).

Extremely common everywhere on mud-flats, in a few instances arriving as early as August and staying as late as May.

1 *Limosa horsfieldi*, Sykes, P. Z. S. 1833, p. 163 (Dukhun, India).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

78. *Totanus fuscus* (Linn.).

Scolopax fusca, Linn., Syst. Nat. i, 1766, p. 243 (Europe).

Totanus fuscus, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 35 (Chainat, Central Siam, and mouth of Chao Phya river, near Bangkok).

Williamson's birds above noted are the sole recorded specimens from Siam.

79. *Terekia cinerea* (Gülden.).

Scolopax cinerea, Güldenstadt, Nov. Comm. Petrop., xix, 1774, p. 473, pl. 19 (S. E. Russia).

Terekia cinerea, A., p. 460 (Tavoy); C. ii, p. 407 (Tenasserim); E., p. 118 (Jalor); F., p. 13 (Peninsular Siam); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 35 (Mouth of Chao Phya river, near Bangkok).

Probably common everywhere in winter at river mouths and on mud-flats.

Pseudoglottis guttifer (Nordm.).

Totanus guttifer, Nordman in Erman's Reise u. d. Erde, 1835, p. 17.

Totanus haughtoni, C. ii, p. 406 (Amherst, Tenasserim).

Pseudoglottis guttifer, F., p. 13 (Kedah and Perak).

This species is rare in collections, probably on account of its close resemblance to the true Greenshank. It is certain to be met with on the coasts of Trang and Setul, and probably in other localities also.

80. *Glottis nebularius* (Gunner).

Scolopax nebularius, Gunner, Leem. Lap. Besch., 1767, p. 251 (Lapland).

Totanus glottis, A., p. 463 (Tenasserim town).

Totanus canescens, C. ii, p. 402.

Glottis nebularius, F., p. 13 (Terutau Id.); I., p. 146 (Koh Lak); J., p. 140 (Koh Muk, Trang).

The Greenshank is very common on the western coast; it is probably a good deal rarer on the eastern side of the Peninsula.

Pavoncella pugnax (Linn.).

Tringa pugnax, Linn., Syst. Nat. i, 1766, p. 247 (Europe).

Machetes pugnax, C. ii, p. 396 (Lower Pegu: mouth of Sittang river).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

The Ruff is almost certain to be eventually found in Lower Siam: there are somewhat doubtful records from the Malay Peninsula.

81. *Rhyacophilus glareola* (Linn.).

Tringa glareola, Linn., Syst. Nat. i, 1766, p. 250 (Sweden).

Rhyacophilus glareola, A, p. 462 (Pakchan); B, p. 83 (Salanga Id.); D., p. 80 (Patelung); F., p. 13 (Trang); I., p. 146 (Koh Lak).

Totanus glareola, C. ii, p. 401.

1 ♀ ad. Mamoh, Pakchan. 27 February, 1919. [No. 4294].

5 ♂, 8 ♀. Koh Lak, S. W. Siam. 3—9 April, 1919. [Nos. 5008, 5334—5, 5084, 5104—7, 5130—1, 5159, 5181, 5210].

"Iris dark; bill black, greenish at base; feet sage-green or greenish grey."

Total length ♂, 225, 215, 216, 220; ♀, 220, —, 210, 212, 211, 223, 208, 223, 223.

Wing ♂, 125, 117 (m.), 129, 122, 126; ♀, 128, 125, 124, 127, 126, 128, 121, 127, 127.

Tail ♂, 54, 48, 57, 58; ♀, 53, 60, 45, 54, 53, 56, 50, 55, 60.

Tarsus ♂, 38.5, 38, 36, 35, 33.5; ♀, 38, 34, 37.5, 39, 37, 38, 34, 36, 38.

Bill from gape ♂, 31, 31, 33, 30, 31; ♀, 34, —, 32, 33, 30, 33.5, 32, 33, 34 mm.

Very common everywhere.

82. { *Limonites minuta minuta* (Leisl.).

83. { *Limonites minuta ruficollis* (Pall.).

Tringa minuta, Leisl. in Bechst. Naturg. Deutschl. Nachtr. i, 1912, p. 74; A., p. 461 (Mergui); C. ii, p. 389 (Mergui, Tongka); E., p. 118 (Patani).

Tringa ruficollis, Pallas, Reis. Russ. Reich. iii, 1766, p. 700 (Siberia).

Limonites ruficollis, Sharpe, Cat. Birds Brit. Mus. xxiv, 1896, p. 547 (Mergui, Tongkah Id.); F., p. 14 (Kedah).

We are unable to disentangle the records relating to the Eastern and Western series of this Stint, viz., *L. m. minuta* and *L. m. ruficollis*, which are almost impossible to discriminate in

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

winter plumage. Both occur, the latter in very much larger numbers than the former.

84. *Limonites minutilla subminuta* (Middend.).

Tringa subminuta, Middendorf, Reise in Nord. und Ost. Sibir. ii. 1851, p. 222, pl. xix, fig. 6 (Siberia); Williamson, Journ. N. H. Soc. Siam, i, 1915, p. 199 (Bangkok).

Tringa ruficollis, A., p. 461 (near Tavoy).

Limonites damocensis, Sharpe, Cat. Birds Brit. Mus. xxiv, 1896, p. 555 (Tavoy and Salanga Id.).

Erobia subminuta, M. 1, p. 39 (Klong Wang Hip, Peninsular Siam).

1 ♂. Koh Lak, S. W. Siam. 7 April, 1919. [No. 5134].

Total length 155; wing 90; tail 48; tarsus 23; bill from gape 18.5 mm.

"Iris dark; bill black, dull greenish yellow at base of lower mandible; feet dull greyish sage-green, darker on joints."

Very common.

***Limonites temmincki* (Leisl.).**

Tringa temmincki, Leisl. in Bechst. Naturg. Deutsch. Nachtr. ii, 1812, p. 78 (Germany); A., p. 461 (Tavoy); C. ii, p. 392 (Tenasserim); Williamson, Journ. Nat. Hist. Soc. Siam, i, 1915, p. 199 (Bangkok).

This Stint has not been recorded as yet from the Malay Peninsula: it is however almost certain to occur in the northern parts.

85. *Tringa tenuirostris* (Horsf.).

Totanus tenuirostris, Horsf., Trans. Linn. Soc. xiii, 1821, p. 192 (Java).

Tringa crassirostris, Faun. Jap. 1847, p. 107, pl. 64; Williamson, Journ. N. H. Soc. Siam, iii, 1918, p. 35 (near Meklong, Central Siam).

Williamson found the Eastern Knot common in the above locality. In the Malay Peninsula, whence we have only four specimens, it is a very rare bird.

86. *Ancylochilus subarquatus* (Güldenst.).

Scolopax subarquata, Güldenstadt, Nov. Comm. Petrop. xix, 1774, p. 471.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Gates, Birds Brit. Barmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Tringa subarquata A., p. 460 (Mergui); E., p. 118 (Patani); Williamson, Journ. N. H. Soc. Siam, ii, 1916, p. 62 (Lakon and Bandon, Peninsular Siam).

Pelidna subarquata, C. ii, p. 395 (Tenasserim).

Probably fairly common. Gyldenstolpe (Ibis, 1920, p. 761) records this bird under the name *Tringa ferruginea chinensis* J. E. Gray.

87. *Limicola platyrhyncha* (Temm.).

Tringa platyrhyncha, Temminck, Man. d'Orn. 1815, p. 398; E., p. 118 (Patani); Williamson, Journ. N. H. S. Siam, iii, 1918, p. 36 (Mouth of Chao Phya river, near Bangkok).

Not common, though large flocks usually occur. Recorded by Gyldenstolpe (Ibis, 1921, p. 761) as *Limicola falcinellus* (Brünnich).

88. *Rostratula capensis* (Linn.).

Scolopax capensis, Linn., Syst. Nat. i, 1776, p. 246 (Cape of Good Hope).

Rostratula capensis, Herbert. Journ. Nat. Hist. Soc. Siam, i, 1914, p. 54 (Bangkok).

In the Malay Peninsula the Painted Snipe is a fairly common species; the same will be true of it in most parts of Siam.

Scolopax rusticola Linn.

Scolopax rusticola, Linn., Syst. Nat. i, 1766, p. 243 (Europe); A., p. 459 (near Tavoy).

The Woodcock has once been obtained in the Malay Peninsula and there are one or two visual records of fair credibility; it is therefore likely to occur in Peninsular Siam. Mr. W. J. F. Williamson informs us that the bird is fairly common in Northern Siam in the winter months, and that it is regularly obtained by sportsmen, from near Chiangmai down to Raheng, between October and March.

Gallinago nemoricola Hodgs.

Gallinago nemoricola, Hodgson, P. Z. S. 1836, p. 8 (Nepal); A., p. 459 (Observed near Malewun).

We include this species on Davison's very emphatic statement. It should be noted, however, that the species bears a strong

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| <p>I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.</p> <p>J. Robinson, Journ. F. M. S. Mus. vii, 1917.</p> <p>K. Kloss, Ibis, 1918.</p> <p>L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.</p> | <p>M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).</p> <p>Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).</p> <p>M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).</p> |
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resemblance to *G. megala*, with which presumably Davison was not acquainted, but which has, of late years, been proved to occur in considerable numbers both in the Malay Peninsula and in the Madras Presidency. No specimens of *G. nemoricola* shot by Davison are included in the Hume collection now in the British Museum.

89. *Gallinago gallinago* (Linn.).

Scolopax gallinago, Linn., Syst. Nat. i, 1766, p. 244 (Europe).

Gallinago coelestis, G., p. 152 (Ratburi and Petchaburi).

Gallinago gallinago, Sharpe, Cat. Birds Brit. Mus. xxiv, 1896, p. 641 (Salanga Id.).

The Fantail will be found in every large bag of snipe obtained in Siam, especially in the middle of the season. It is very common at Bangkok, where (*vide* Williamson, in *litt.*) it usually arrives in the latter half of September, i. e., a month or so later than the Pintail, and also leaves earlier. The latest recorded date for the Fantail in Bangkok is 30th March, by which date it is getting scarce, although the Pintails are still numerous.

90. *Gallinago sthenura* (Kuhl).

Scolopax sthenura, Kuhl, Bonap. Ann. Stor. Nat. Bologna, iv, 1830, fasc. xiv, p. 335 (Sunda Islands).

Gallinago stenura, A., p. 459 (Pakechan); Sharpe, Cat. Birds Brit. Mus. xxiv, 1896, p. 622 (Salanga Ids.); E., p. 117 (Patani); F., p. 14 (Trang); G., p. 152 (Ratburi and Petchaburi); L., p. 91 (Pualu Panjang).

1 ♂. Koh Lak, S. W. Siam. 7 April, 1919. [No. 5141].

Total length 255; wing 126; tail 50; tarsus 32; bill from gape 61 mm.

"Iris dark; bill yellowish brown, apical third black; feet grey, toes darker."

According to Williamson (*in litt.*), the Pintail arrives in Bangkok during the first half of August: the earliest recorded date is the 10th.

Gallinago megala Swinh.

Gollinago megala, Swinhoe, Ibis, 1867, p. 343 (Pekin).

There are no actual records of this Chinese Snipe from Siam,

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

but it is almost certain to occur in small numbers throughout the country. It is a larger, more solidly built, bird than either of its local congeners, and can be at once recognized by the characters of the outer tail-feathers as defined in our key.

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|---|---|
| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| 56, No. 2, 1916. | (first part). |
| J. Robinson, Journ. F.M.S. Mus. vii, 1917. | Baker, Journ. N.H. Soc. Siam, iii, 1919. |
| K. Kloss, Ibis, 1918. | (second part). |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, | M.I. Baker, Journ. N.H. Soc. Siam, iv, 1920. |
| iii, 1919. | (third part). |

GRUIDAE

CRANES.

91. *Antigone antigone sharpii* (Blanford).

Grus (Antigone) sharpii, Blanford, Bull. Brit. Orn. Club, v, 1895, p. vii (Burmese provinces).

Grus antigone, G., p. 30 (Ratburi).

Grus sharpii, G., p. 152 (Ratburi and Petchaburi).

We saw this species in the rice fields near Sawi Bay, S. of Chumpon, in April 1919. It is occasionally met with in the north of the Peninsula, but we know of no authentic instances of its occurrence south of Kuala Kangsar.

Penang specimens in the British Museum are almost certainly from Trang or Perlis.

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| A. Hume, & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905. |
| B. Müller, Die Ornith. der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

IBIDIDAE

IBISES.

1	{ Smaller, plumage white, dissected	<i>Ibis melanocephala</i> .	
	{ Larger: plumage dark .. ..	.. ..	2
2	{ Neck feathered to nape, smaller.. ..	<i>Inocotis davisoni</i> .	
	{ Neck naked to nape, larger	<i>Thaumatibis gigantea</i> .	

92. *Ibis melanocephala* (Lath.).

Tantalus melanocephalus, Lath., Ind. Orn. ii, 1790, p. 709 (India).

Ibis melanocephala, C. ii, p. 268 (Tenasserim); G., p. 152 (Ratburi and Petchaburi); H., p. 89 (Bandon river).

The white Ibis is fairly abundant on both coasts in suitable localities, but is usually almost impossible to approach.

93. *Inocotis davisoni* (Hume).

Geronticus davisoni, Hume, Stray Feath. iii, 1875, p. 300 (Pakchan).

Grptocephalus davisoni, Elliot, P. Z. S. 1877, p. 490; A., p. 485 (Pakchan); C. ii, p. 269 (South Tenasserim); F., p. 17 (Trang); H., p. 89 (Bandon); J., p. 141 (Pulau Lontar); L., p. 92 (Ghirbi and Koh Naka Yai).

Pseudibis papillosa, B., p. 85 (Junk Seylon).

This dark Ibis, though it appears to us but little more than a strongly marked race of the Indian *I. papillosa*, has been elevated to generic rank, partly on the shape of its cranium, and partly on account of the alleged absence of rugose papillæ in the occiput and, therefore, different colour. As a matter of fact our series shows that these papillæ are definitely present, at any rate at certain seasons, and we do not think that the bird can profitably be kept generically distinct. As regards bare parts, our birds are consistently coloured and show no trace of red on the head, as is reported in the case of birds from E. Siam, Cambodia and Yunnan, which have been named *G. harmandi* Oustalet. These birds are either distinct from the present species or, more probably, are to be referred to the true *I. papillosa*.

94. *Thaumatibis gigantea* (Oust.).

Ibis gigantea, Oustalet, Bull. Soc. Philomath. (7), i, 1877, p. 25 (Cochin-China).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Thaumatibis gigantea, Elliot, P. Z. S. 1877, p. 489; F., p. 17, Pl. I. text figs. 5, 7 (Trang); G., p. 152 (Ratburi and Petchaburi); Williamson, Journ. Nat. Hist. Soc. Siam. ii, 1916, p. 71, Pl. (Ratburi); id. op. cit. iv, 1921, p. 196 (Coast of Cambodia).

We saw one specimen of this rare Ibis (which is, however, apparently still fairly common on the Cambodian coast) from the train in a marshy patch of ground, just south of Koh Lak.

Elsewhere in Peninsular Siam it has been obtained on Pulau Terutau by Dr. W. L. Abbott.

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| A. Hume & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905. |
| B. Müller, Die Ornis der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i. | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

CICONIIDAE.

STORKS.

1	{ Mandibles separated in middle .. ..	..	<i>Anastomus oscitans</i> .	
	{ Mandibles normal .. ..	..	..	2
2	{ Top of head with a bony cap, unfeathered ..	..	..	3
	{ Top of head without a bony cap, variably feathered ..	..	..	4
3	{ Larger, with a gular pouch; wing 30 inches or over ..	..	<i>Leptoptilus dubia</i> .	
	{ Smaller, without a gular pouch; wing 27 inches or under .. ..	..	<i>Leptoptilus javanica</i> .	
4	{ Bill straight, crown feathered .. ..	..	..	5
	{ Bill decurved, crown naked .. ..	..	..	6
5	{ Feathers of the neck white, silky ..	..	<i>Dissoura episcopus neglecta</i> .	
	{ Feathers of the neck black, normal ..	..	<i>Xenorhynchus asiaticus</i> .	
6	{ Larger, secondaries rosy in adults, wing-coverts black and white .. ..	..	<i>Pseudotantalus leucocephalus</i> .	
	{ Smaller, secondaries with no rosy flush, wing-coverts white .. ..	..	<i>Pseudotantalus lacteus</i> .*	

95. *Leptoptilus dubia* (Gm.).

Ardea dubia, Gmelin, Syst. Nat. i, 1788, p. 624 (India and Africa).

Leptoptilus argala, C. ii, p. 262 (Tenasserim).

Leptoptilus dubia, G., p. 152 (Ratburi and Petchaburi); I., p. 141 (Ratburi).

We have seen no specimens of the larger Adjutant Bird from the Malayan area or from Peninsular Siam, and doubt if it occurs south of Ratburi. In life it can be distinguished by the possession of a gular pouch, by its much larger size, and by having a grey band across the secondary coverts in breeding birds, not a coppery red one as in *L. javanica*. The species is said to occur in Java, but the identification appears to rest on skeletons and skulls.

96. *Leptoptilus javanica* (Horsf.).

Ciconia javanica, Horsfield, Trans. Linn. Soc., xiii, 1821, p. 188 (Java).

Leptoptilus javanicus, A., f. 469 (Pakchan); I., p. 141 (Koh Lak);

L., p. 92 (Junk Seylon).

Leptoptilus dubius F., p. 16 (Trang).

Common throughout the area, generally in rice fields, in mangrove swamps and on the coastal flats.

*Included in the key in the possible event of its occurrence in the area.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus., vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part):

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

97. *Xenorhynchus asiaticus* (Lath.).

Mycteria asiatica, Latham, Ind. Orn. ii, 1790, p. 670 (India).

Xenorhynchus asiaticus, G., p. 152 (Ratburi and Petchaburi); J., p. 141 (Telibun Straits, Trang).

Not uncommon, but hard to obtain; specimens in the British Museum attributed to Penang are probably from the southern parts of Peninsular Siam.

98. *Dissoura episcopus neglecta* Finsch.

Dissoura neglecta, Finsch., Ornith. Monatsber., 1904, p. 94 (Java).

Melanopelargus episcopus, A., p. 469 (Pakehan).

Dissoura episcopus, B., p. 85 (Junk Seylon); E., p. 115 (Jalor);

F., p. 16 (Trang); G., p. 152 (Ratburi and Petchaburi); H., pp. 88, 142 (Bandon and Koh Samui); L., p. 91 (Ghirbi).

Dissoura episcopus neglecta, I., p. 140 (Hat Sanuk, nr. Koh Lak).

Very common in rice fields, etc., throughout the northern part of the Malay Peninsula, but practically unknown south of Kedah. The Malaysian form has been separated from the typical Indian race on account of a narrowing bare stripe down the sides of the neck. In some of our series, possibly younger birds, this region is covered with soft down.

99. *Pseudotantalus leucocephalus* (Penn.).

Tantalus leucocephalus, Pennant, Ind. Zool., 1769, p. 11, Pl. x (Ceylon); A., p. 484 (Tavoy and Pakehan).

Pseudotantalus leucocephalus, G., p. 152 (Ratburi and Petchaburi); H., p. 88 (Bandon); L., p. 91 (Ghirbi).

The Pelican Ibis, or Painted Stork, is fairly common in our area and extends south as far as Langkawi, south of which it is replaced by *P. lacteus*. It is common in rice fields, and roosts at night on their margins on the tops of very high trees.

100. *Anastomus oscitans* (Bodd.).

Ardia oscitans, Boddaert, Tabl. Pl. Enl., 1783, p. 55 (Pondicherry).

Anastomus oscitans, G., p. 30 (Ratburi); Williamson, Journ. N. H.

Soc. Siam, iii, 1918, pp. 39, 40 (between Tachin and Bangkok, and Ta Rua, C. Siam).

The above records are the southernmost noted for the Shell-Ibis, or Open-bill as it is perhaps more correctly called.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

ARDEIDAE.

HERONS AND BITTERNS.

1	{ Tail feathers 12	2
	{ Tail feathers 10	12
2	{ Feathering on tibio-tarsus not extensive	3
	{ Feathering extending nearly to heel	8
3	{ Middle toe and claw longer than tarsus <i>Pyrrherodias purpurea manillensis</i> .	
	{ Middle toe and claw shorter than tarsus	4
4	{ Edge of mandibles serrated	5
	{ Edge of mandibles not serrated	7
5	{ With ornamental plumes to head, no dorsal train	6
	{ With no ornamental plumes, a dorsal train .. <i>Mesophoyx intermedia</i> .	
6	{ Crown of head slate colour	<i>Ardea sumatrana</i> .
	{ Crown of head white	<i>Ardea cinerea jouyi</i> .
7	{ Bill (culmen) not, or only slightly, exceeding middle toe and claw; tarsus more than 5 inches	<i>Herodias alba</i> .
	{ Bill (culmen) much exceeding middle toe and claw; tarsus less than 4 inches	<i>Garzetta garzetta</i> .
8	{ Bill without serrations	9
	{ Bill with serrations	10
9	{ Culmen longer than tarsus	<i>Demiegretta sacra</i> .
	{ Culmen about equal to tarsus	<i>Nycticorax nycticorax</i> .
	{ Culmen shorter than tarsus	<i>Gorsachius melanolophus</i> .
10	{ Bill longer than middle toe and claw; plumage with no white	<i>Butorides javanica</i> .
	{ Bill equal to middle toe and claw; plumage mainly white	11
	{ Bill shorter than middle toe and claw	<i>Bubulcus coromandus</i> .
11	{ Smaller, head and neck brownish	<i>Ardeola grayi</i> .
	{ Larger, head and neck blackish	<i>Ardeola bacchus</i> .
12	{ Middle toe and claw equal to tarsus	13
	{ Middle toe and claw exceeding tarsus	<i>Botaurus stellaris</i> .
13	{ Size larger, wing over 6 inches	<i>Dupetor flavicollis</i> .
	{ Size smaller, wing under 6 inches	14
14	{ Tarsus feathered to heel; primaries blackish	<i>Ardetta sinensis</i> .
	{ Tarsus not feathered to heel; primaries chestnut	<i>Ardetta cinnamomea</i> .

101. *Pyrrherodias purpurea manillensis* Meyen.

Ardea purpurea, var. *manillensis*, Acta Acad. Leop-Carol. xvi, Suppl., p. 102.

Ardea purpurea, A., p. 472 (Tavoy).

Phoyx manillensis, D., p. 80 (Patelung).

Ardea manillensis, G., p. 152 (Ratburi and Petchaburi).

♂ ad. Mamoh, Pakchan, Peninsular Siam. 27 February,

1919. (No. 4295).

- I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. M. Baker, Journ. N. H. Soc. Siam, iii, 1919.
56, No. 2, 1916. (first part).
J. Robinson, Journ. F. M. S. Mus. vii, 1917. Baker, Journ. N. H. Soc. Siam, iii, 1919.
K. Kloss, Ibis, 1918. (second part).
L. Robinson and Kloss, Journ. N. H. Soc. Siam, M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
iii, 1919. (third part).

"Iris chrome; orbits lemon yellow tinged with green; upper mandible brown edged with ochre yellow, lower ochraceous yellow, base greenish; thighs and tarsi yellow, tarsi and toes black in front."

Total length, 925; wing, 375; tail, 160; tarsus, 124; bill from gape, 145 mm.

Personally we have found the Purple Heron rarer in the Peninsula than it is in Sumatra: in the south, indeed, it is extremely uncommon.

102. *Ardea sumatrana* Raffles.

Ardea sumatrana, Raffles, Trans. Linn. Soc. xiii, 1822, p. 325 (Sumatra); A., p. 469 (Mergui to Pakchan); F., p. 14 (Terutau Id.); H., p. 142 (Koh Pennan).

Common in most places along the coast on mud-flats and in mangrove swamps, but very wary and hard to approach.

103. *Ardea cinerea joudyi* Clark.

Ardea cinerea joudyi, Clark, Proc. U. S. Nat. Mus., 32, 1907, p. 468 (Korea); I., p. 136 (Koh Lak).

Ardea cinerea, A., p. 472 (Pakchan); G., p. 152 (Ratburi and Petchaburi).

Probably fairly common in winter.

104. *Herodias alba* (Linn.).

Ardea alba, Linn., Syst. Nat. i, 1766, p. 239 (Europe).

Herodias torra, A., p. 472 (Orab Island, Tavoy Estuary).

Herodias alba, H., p. 89 (Bandon).

Local and rare.

105. *Mesophoyx intermedia* (Wagl.).

Ardea intermedia, Wagler, Ibis, 1829, p. 659.

Mesophoyx intermedia, I., p. 136 (Koh Lak).

Distinctly uncommon.

106. *Garzetta garzetta* (Linn.).

Ardea garzetta, Linn., Syst. Nat. i, 1766, p. 237 (Oriental Region).

Herodias garzetta, B., p. 84 (Junk Seylon); Williamson, Journ.

Nat. Hist. Soc. Siam, iii, pp. 40, 41 (Tachin and Bangkok, C. Siam, and Anghin and Bang Phra, Inner Gulf of Siam).

Garzetta garzetta, E., p. 117 (Patani).

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Probably not uncommon in suitable localities, but, as remarked by Williamson, apt to be overlooked owing to its close resemblance to the ubiquitous *Bubulcus coromandus*.

107. *Demiegretta sacra* (Gm.).

Ardea sacra, Gmelin, Syst. Nat. i, 1788, p. 640.

Demiegretta sacra, L., p. 481 (Mergui); Sharpe, Cat. Birds Brit. Mus., xxvi, 1898, p. 143; E., p. 117 (Patani); F., p. 15, Malay Peninsula); H., p. 143 (Koh Samui and Koh Pennan); I., p., 137 (Koh Lak); L., p. 92 (Pulau Panjang).

♀. Koh Pipidon, Ghirbi Bay, W. Coast Siam. 5 February, 1919 (No. 3944).

"Iris chrome; tarsi black, toes mottled with yellow; bill blackish."

Total length, 630; wing, 278; tail, 104; tarsus 79; bill from gape 90 mm.

Common throughout the coasts of Malaya in suitable localities. Within our area a very large proportion of the birds are in the grey plumage, with a more or less extensive white streak on the throat.

Nycticorax nycticorax (Linn.).

Ardea nycticorax, Linn., Syst. Nat. i, 1788, p. 235.

Nycticorax griseus, Williamson, Journ. Nat. Hist. Soc. Siam, i, 1914, p. 48 (Bangkok).

Nycticorax nycticorax, Stuart Baker, Journ. Nat. Hist. Soc. Siam, iv, 1920, p. 42 (Hua Takhae, C. Siam).

The Night Heron will probably be found in Lower Siam, though it is not yet on record from our area.

108. *Gorsachius melanolophus* (Raffles).

Ardea melanolophus, A., p. 484 (neighbourhood of Pakchan); F., p. 15 (Trang); I., p. 137 (Koh Lak).

Not really uncommon within its area of distribution, but easily escaping notice owing to its nocturnal habits. Mr. W. J. F. Williamson informs us that he has found it breeding in heavy forest at Pak Jong, Eastern Siam, in June and August.

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

109. *Butorides javanica* (Horsf.).

Ardea javanica, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 190 (Java).

Butorides javanica, A., p. 483 (Tavoy to Bankasoon); B., p. 84 (Junk Seylon); E., p. 116 (Patani); F., p. 15 (Malay Peninsula); K., p. 86 (Tachin); L., p. 92 (Pulau Panjang).

♀. Tung Pran, Takuatung, W. Coast Siam. 15 February, 1919.

(No. 4023).

"Iris yellow; orbits and face apple-green; upper mandible black, lower and feet greenish yellow."

Total length, 432; wing, 164; tail, 65; tarsus, 47; bill from gape, 75 mm.

110. *Ardeola grayi* (Sykes.)

Ardea grayii, Sykes, P. Z. S. 1832, p. 158 (Dekkan, India).

Ardeola grayi, A. p. 481 (Mergui to Pakchan); E., p. 116 (Patani); G., p. 152 (Ratburi and Petchaburi); I., p. 138 (Koh Iak); K., p. 86 (Tachin); L., p. 92 (Pulau Panjang).

♀. Renong river, Peninsular Siam. 21 February, 1919.

(No. 4149).

"Iris orange; upper mandible black, lower yellow, tip black; orbits, etc., apple-green; feet pale apple-green."

Total length, 450; wing, 201; tail, 80; tarsus, 53; bill from gape, 76 mm.

Very common right up the Pakchan, in large flocks of forty or fifty individuals.

111. *Ardeola bacchus* (Bp.).

Buphus bacchus, Bonaparte, Consp. Av. ii, 1857, p. 127 (Malay Peninsula).

Ardeola prasinocelis, A., p. 481 (Choung-thanoung, S. Tenasserim); C. ii, p. 253 (S. Tenasserim); F., p. 15 (Trang); H., p. 143 (Koh Samui).

Rarer than the preceding, but the two forms are rather difficult to distinguish except in breeding plumage.

112. *Bubulcus coromandus* (Bodd.).

Caneroma coromanda, Boddaert, Tabl. Pl. Enl., 1783, p. 54.

Buphus coromandus, A., p. 481 (Tavoy, Pakchan).

A. Hume & Davison, Stray Feathers, vi., 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

Bubulcus coromandus, B., p. 84 (Junk Seylon); D., p. 80 (Patchung); E., p. 116 (Patani); F., p. 16 (Trang); G., p. 152 (Ratburi and Petchaburi); I., p. 139 (Koh Lak); K., p. 87 (Koh Lak).

Common everywhere in rice fields and in attendance on cattle.

113. *Ardetta sinensis* (Gm.).

Ardea sinensis, Gmelin, Syst. Nat. i, 1788, p. 642 (China).

Ardetta sinensis, A., p. 484 (Tavoy, Pakchan); B., p. 84 (Junk Seylon); H., p. 143 (Koh Pennan); I., p. 139 (Koh Lak).

Probably partially migrating and commonest in winter.

114. *Ardetta cinnamomea* (Gm.).

Ardea cinnamomea, Gmelin, Syst. Nat., i, 1788, p. 643 (China).

Ardetta cinnamomea, A., p. 483 (Tavoy to Pakchan); B., p. 84 (Junk Seylon); E., p. 116 (Patani); G., p. 152 (Ratburi and Petchaburi).

♀, imm. Tasan, Chumpon, Peninsular Siam. 24 March, 1919. (No. 4845).

"Iris yellow; bill pale yellow, tomia and base brown; feet greenish, soles yellow."

Total length, 370; wing, 143; tail, 45; tarsus, 52; bill from gape, 63 mm.

115. *Dupetor flavicollis* (Lath.).

Ardea flavicollis, Latham, Ind. Orn. ii, 1790, p. 701 (India).

Ardetta flavicollis, A., p. 483 (Bankasoon); B., p. 84 (Junk Seylon).

Rare wherever it occurs. It has been found breeding at Bangkok by Williamson.

Botaurus stellaris (Linn.).

Ardea stellaris, Linn., Syst. Nat. i, 1766, p. 239 (Europe).

In Siam only recorded from Raheng, in the north of C. Siam, *vide* Herbert, Journ. Nat. Hist. Soc. Siam, ii, 1916, p. 58. Two specimens are known from the Malay Peninsula, from Malacca and Singapore.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1929.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part). Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

ANSERIFORMES.

DUCKS AND GEESE.

1	{ Wing over 7 inches .. .. .	..	..	..	2
	{ Wing under 7 inches; bill short and high ..	..	Nettopus coromandelianus.		
2	{ Wing under 9 inches .. .. .	..	..	3	
	{ Wing over 10 inches .. .. .	..	..	4	
3	{ With a speculum on the wing .. ..	..	Querquedula querquedula.		
	{ With no speculum on the wing .. ..	..	.. Dendrocygna javanica.		
4	{ Head buff or whitish, speckled with black ..	..	.. Casarca casarca.		
	{ Head white, strongly speckled with black ..	..	..	5	
5	{ Belly white .. .. .	..	Sarcidiornis melanonotus.		
	{ Belly brown or black .. .. .	..	Asarcornis scutulata leucoptera.		

116. *Sarcidiornis melanonotus* (Penn.).

Anser melanonotus, Pennant, Faunula Indica, 1769, p. 12, pl. xi (Ceylon).

Sarcidiornis melanonotus, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 42 (Klong Luang Peng, nr. Bangkok.).

The only reference to the Comb Duck is that given above: elsewhere the nearest localities are the Attaran river, N. Tenasserim, and the vicinity of Chiangmai.

117. *Asarcornis scutulata leucoptera* (Blyth).

Sarcidiornis leucopterus, Blyth, Journ. Asiat. Soc. Bengal, xviii, 1849, p. 820 (Burma).

Anas leucoptera, C. ii, p. 281 (Tavoy and Mergui).

Asarcornis scutulata, D., p. 80 (Patelung).

Asarcornis leucoptera, F., p. 19 (Trang); H., p. 89 (Bandon); I., p. 134 (Hat Sanuk and Hue Sai near Koh Lak).

Asarcornis scutulata leucoptera, L., p. 92 (Ghirbi).

This heavy Wood-Duck is common in Peninsular Siam, where it feeds in the rice fields largely on species of snail (*Ampullaria*), and lies up for the night in the adjacent jungle. Our men met with it on a small stream near Hat Sanuk, but did not secure specimens.

118. *Nettopus coromandelianus* (Gm.).

Anas coromandeliana, Gmelin, Syst. Nat. i, 1788, p. 522 (Coromandel, India).

Nettopus coromandelianus, A., p. 486 (Tavoy); D., p. 81 (Patelung); G., p. 153 (Ratburi and Petchaburi).

Said to be common at the north end of the Talé Sap and in the Talé Noi in Patelung, but rare everywhere else in the Peninsula.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

119. *Dendrocygna javanica* (Horsf.).

Anas javanica, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 199 (Java).

Dendrocygna javanica, A., p. 486 (Tavoy); D., p. 81 (Patelung); F., p. 21 (Trang); G., 153 (Rathburi and Petchaburi); H., pp. 89, 143 (Bandon and Koh Samui); L., p. 93 (Ghirbi).

Common everywhere in the northern parts of the Peninsula.

***Casarca casarca* (Linn.).**

Anas casarca, Linn., Syst. Nat. iii, 1768, App., p. 224.

Casarca rutila, A., p. 489 (Kolan Id., south of Mergui).

Tadorna casarca, C. ii, p. 227.

This sheldrake may possibly occur in Lower Siam. It has been seen by Davison in the Mergui Archipelago, though there are no other records from Tenasserim.

120. *Querquedula querquedula* (Linn.).

Anas querquedula, Linn., Syst. Nat. i, 1766, p. 203 (Europe).

Querquedula querquedula, G., p. 153 (Rathburi and Petchaburi); I., p. 135 (Inner Gulf of Siam).

Met with at times in the marshes on the Perak river, but, like all ducks except the Wood-Duck and Tree-Teal, very rare in the Peninsula.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919.

(second part).

M.I. Baker, Journ. N.H. Soc. Siam, iv, 1920.

(third part).

STEGANOPODES.

DARTERS, CORMORANTS, PELICANS, ETC.

1	{ Tail deeply forked	2
	{ Tail rounded	3
2	{ Bill from gape 4.5 inches or over	<i>Fregata aquila.</i>
	{ Bill from gape 3.75 inches or under	<i>Fregata ariel.</i>
3	{ Middle tail-feathers not greatly elongate: nostrils not pervious	4
	{ Middle tail-feathers greatly elongate; nostrils pervious	<i>Phaethon indicus.</i>
4	{ Size very large; bill flattened	9
	{ Size smaller; bill compressed	5
5	{ With nostrils visible	6
	{ No external nostrils	<i>Sula sula</i>
6	{ Bill hooked	7
	{ Bill pointed	<i>Plotus melanogaster.</i>
7	{ Tail of 14 feathers	<i>Phalacrocorax carbo albiventer.</i>
	{ Tail of 12 feathers	8
8	{ Bill (culmen) less than 1.5 inches	<i>Phalacrocorax javanicus.</i>
	{ Bill (culmen) more than 2.2 inches	<i>Phalacrocorax fuscicollis.</i>
9	{ Feathering on forehead pointed	<i>Pelecanus roseus.</i>
	{ Feathering on forehead ending in a concave line	<i>Pelecanus philippenensis.</i>

121. *Fregata ? aquila* (Linn.).*Pelecanus aquilus*, Linn., Syst. Nat. i, 1766, p. 216 (Ascension Id.).*Fregata minor*, Hume, Stray Feathers, ix, 1880, p. 119 (Tongka; Takuapah; (Langkawi Ids.).*Fregata aquila*, B., p. 86 (Junk Seylon).? *Fregata andrewsi*, Mathews, Austral. Av. Rec. ii, 1914, p. 120, Christmas Id.; Gyldenstolpe, Ibis, 1920, p. 775.

We have frequently seen Frigate birds on both coasts of Siam, notably in Bandon Bight, but have not obtained specimens; the smaller species has been obtained in the vicinity of Pulau Tinggi, off the coast of Johore.

Fregata ariel (Gould).*Attagen ariel*, Gould in Gray's Gen. Birds, iii, 1869, p. 669 (Australia).*Fregata ariel ariel*, Rothschild, Nov. Zool., xxii, 1915, p. 145.

It is not profitable to discuss the names for Siamese birds in the absence of specimens, and we have therefore not attempted to assign to the exact races the two forms that almost certainly occur. Reference may be made to Lord Rothschild's article on the Genus,

A. Hume, & Davison, Stray Feathers, vi, 1878.
 B. Müller, Die Ornis der Insel Salanga, 1882.
 C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
 D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
 F. Robinson and Kloss, Ibis, 1910-11.
 G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
 H. Robinson, Journ. F. M. S. Museums, v, 1915.

above quoted, but it may here be noted that the ♂ from Malacca (Davison coll.) in the British Museum, which he assigns to *F. aquila*, with a query as to the correctness of its provenance, is obviously the bird from Pulau Nongsa in Singapore Straits, described by Hume (Stray Feathers, ix, p. 119), under the name *Fregata minor* (Gm.).

122. *Phaethon indicus* Hume.

Phaethon indicus, Hume, Stray Feathers, iv, 1876 p. 481 (Mekran Coast); A., p. 493 (Victoria Point).

The only record for our area is the one noted by Davison from south of Victoria Point. There is a skin labelled "Straits of Malacca (Cantor)" in the British Museum, but we have never seen the bird in local waters.

123. *Sula sula* (Linn.).

Pelecanus sula, Linn., Syst. Nat. i, 1766, p. 218 (Indian Seas).

Sula australis, A., p. 493 (Coast of Peninsular Siam and Tenasserim).

Dysporus sula, C. ii, p. 229 (Coast of Tenasserim).

Sula sula, Williamson, Journ. Nat. Hist. Soc. Siam, ii, 191, p. 63 (Koh Rin); id. op. cit. iii, 1918, p. 38 (Koh Chuan).

Common on the western coast of Siam: we have not seen it on the east side, though we have been assured that it is found breeding in a small island off the coast of Nakon Sritamarat

Plotus melanogaster (Penn.).

Anhinga melanogaster, Pennant, Indian Zool., 1760, p. 53, pl. XV (Ceylon and Java); F., p. 19 (Langkawi Ids.).

This bird also must certainly occur in Lower Siam: two or three specimens used to live in the lake in Dayang Bunting, Langkawi Ids.

124. *Phalacrocorax carbo albiventer* (Tickell).

Carbo albiventer, Tickell, Journ. Asiat. Soc. Bengal, xi, 1842, p. 463 (Chaibassa, South Behar).

Phalacrocorax carbo, A., p. 496 (Tavoy); E., p. 115 (Patani); G., p. 153 (Ratburi and Petchaburi); H., p. 143 (Koh Pennan).

Phalacrocorax carbo indicus, Mathews, Birds of Australia, iv, 1915, p. 171 (India).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Quite common on the east coast of Siam but rare on the west. Tropical races are much smaller than European birds and the name *P. carbo albiventer* Tickell, probably applies.

125. *Phalacrocorax javanicus* (Horsf.).

Carbo javanicus, Horsf., Trans. Linn. Soc., xiii, 1822, p. 197 (Java).

Phalacrocorax pygmaeus, A., pp. 496, 521 (Tavoy); C. ii, p. 234 (Tenasserim).

Phalacrocorax javanicus, G., p. 153 (Ratburi and Petchaburi).

Phalacrocorax pygmaeus javanicus, L., p. 133 (Ratburi).

The Lesser Cormorant is not a marine species, but appears to occur on the upper reaches of many rivers in Siam and the Malay Peninsula. We have seen it in mountain streams in Bandon.

Phalacrocorax fuscicollis Steph.

Phalacrocorax fuscicollis, Steph. in Shaw's Gen. Zool. xiii, 1826, pt. I, p. 91 (Bengal); A., p. 496 (Salween and Sittang); C. ii, p. 233; Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 39 (Klong Samrong, S. E. of Bangkok).

Though the Brown-necked Shag has not as yet been actually recorded from our area, it is almost certain to occur; it is therefore inserted in the key.

126. *Pelecanus philippensis* Gm.

Pelecanus philippensis, Gmelin, Syst. Nat., i, 1788, p. 571 (Philippine Ids.); A., p. 495 (Thatone). G., p. 152 (Ratburi and Petchaburi); Williamson, Journ. Nat. Hist. Soc. Siam, i, 1915, p. 219 (Singora).

Pelecanus roseus Gm.

Pelecanus roseus, Gmelin, Syst. Nat. i, 1788, p. 570 (Luzon).

Pelicans are common in the Trang swamps, in the vicinity of the Talé Sap and Talé Noi in Patlung, and on the coast in Patani Bay, and on the Bandon Bight, but few specimens have, as far as we are aware, been obtained. This species, however, is certain to occur.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

TUBINARES.

PETRELS AND PUFFINS.

Tarsi covered in front with hexagonal scales; claws sharp; rump not white	<i>Oceanodroma monorhis</i>
Tarsi covered in front with transverse scutes; claws flat; rump white	<i>Oceanites oceanicus</i>

***Oceanodroma monorhis* (Swinh.).**

Thalassidroma monorhis, Swinhoe, Ibis, 1867, p. 386 (Amoy); Van Oort, Notes Leyd. Mus., xxxiii, 1911, p. 111 (Semarang, Java).

There are three known specimens of this rare Petrel from Indo-Malayan waters; that from Java recorded above, a female obtained at Keppel Harbour, Singapore, by Mr. Koh Ah Wing, now in the Raffles Museum, and a male obtained in the One Fathom Bank Lighthouse, off the coast of Selangor, in the F. M. S. Museum. The species will probably be found on the Siamese coast also.

***Oceanites oceanicus* (Kuhl).**

Procellaria oceanica, Kuhl, Beitr., p. 136, pl. x, fig. i. (1820).
Oceanites oceanicus, A., p. 490.

Davison records this species as seen off the Moscovs, a group of islets north of Tavoy, and we have on several occasions in stormy weather seen small black petrels with white rumps, in various parts of the Straits Settlements, so the species probably occurs off the Siamese coast.

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- | | |
|---|---|
| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part). |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part). |
| K. Kloss, Ibis, 1918. | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part). |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | |

THE
JOURNAL
OF THE
Natural History Society of Siam.

Volume V.

Bangkok.

Number 2.

THE BIRDS OF SOUTH-WEST AND PENINSULAR SIAM.

BY HERBERT C. ROBINSON, C.M.Z.S., M.B.O.U.,

AND

CECIL BODEN KLOSS, F.Z.S., M.B.O.U.

(Continued from page 87).

ACCIPITRIFORMES.

OSPREYS, HAWKS, EAGLES, KITES AND VULTURES.

1	{ No aftershaft to feathers	<i>Pandion haliaëtus cristatus.</i>	2
	{ With an aftershaft to feathers .. ..	.. ..
2	{ Crown of head feathered .. ..	.. ..	3
	{ Crown of head naked .. ..	.. ..	36
	{ With a double notch to the upper mandible .. ..	.. ..	4
3	{ With a single notch to the upper mandible .. ..	.. ..	5
	{ With no notch to the upper mandible .. ..	.. ..	8
4	{ Upper parts black; size smaller	<i>Baza lophotes burmana.</i>	
	{ Upper parts not black; size larger	<i>Baza jerdoni.</i>	
5	{ Size very small; wing under 5 inches	<i>Microhierax fringillarius.</i>	6
	{ Size larger; wing over 6 inches .. ..	.. ..
6	{ Upper parts reddish brown	<i>Cerchneis timuncula saturata.</i>	
	{ Upper parts greyish or blackish .. ..	.. ..	7
7	{ Lower parts orange-brown; smaller	<i>Falco severus severus.</i>	
	{ Lower parts pinkish white; larger	<i>Falco peregrinus calidus.</i>	
8	{ Lores bristly .. ..	.. ..	11
	{ Lores feathered .. ..	.. ..	9
9	{ Bill thin, much compressed	<i>Machæramphus alcinus</i>	
	{ Bill normal .. ..	.. ..	10
10	{ Crest in adults long	<i>Pernis ptilorhynchus ptilorhynchus.</i>	
	{ Crest in adults short or lacking	<i>Pernis ptilorhynchus ruficollis.</i>	
11	{ Tarsus feathered .. ..	.. ..	12
	{ Tarsus partially or entirely bare .. ..	.. ..	17

12	{ Claws much curved, hind claw longer than inner	13
	{ Claws straight, hind claw shorter than inner .. <i>Ictinaëtus malayensis</i> .	
13	{ Primaries exceeding secondaries by more than length of tarsus	14
	{ Primaries exceeding secondaries by less than length of tarsus	15
14	{ No elongate occipital crest <i>Aquila maculata</i> .	
	{ An elongate occipital crest <i>Lophotriorchis kieneri</i> .	
15	{ No elongate crest <i>Spizaëtus cirrhatus limnaëtus</i> .	
	{ An elongate crest	16
16	{ Larger; wing exceeding 16 inches <i>Spizaëtus nipalensis</i> .	
	{ Smaller; wing less than 14 inches <i>Spizaëtus alboniger</i> .	
17	{ Tarsi reticulated; scutellae broader than high	18
	{ Tarsi with some scutellae broader than high	22
18	{ Tarsi more than $\frac{1}{2}$ length of bill from gape	19
	{ Tarsi less than $\frac{1}{2}$ length of bill from gape <i>Elanus ceruleus ceruleus</i> .	
19	{ Scales in front of tarsus the same size as those behind	20
	{ Scales in front of tarsus larger than those behind <i>Buteo indicus</i> .	
20	{ Not crested <i>Circus gallicus</i> .	
	{ Crested	21
21	{ Wing always exceeding 16 inches <i>Spilornis cheela rutherfordi</i> .	
	{ Wing never exceeding 16 inches <i>Spilornis cheela bassus</i> .	
22	{ Scales beneath toes rough and pointed	23
	{ Scales beneath toes not rough and pointed	25
23	{ Breast in adults grey; claws rounded beneath	24
	{ Breast in adults white; claws grooved beneath <i>Haliaëtus leucogaster</i> .	
24	{ Size large; wing exceeding 17 inches <i>Polioaëtus ichthyaëtus</i> .	
	{ Size small; wing less than 17 inches <i>Polioaëtus humilis humilis</i> .	
25	{ Size moderate; wing over 12 inches	26
	{ Size smaller; wing under 11 inches	31
26	{ Tarsus short	27
	{ Tarsus long	29
27	{ Tail rounded <i>Haliastur indus intermedius</i> .	
	{ Tail forked	28
28	{ Larger; a conspicuous white patch beneath wing <i>Milvus melanotis</i> .	
	{ Smaller; no conspicuous white patch beneath wing <i>Milvus migrans govinda</i> .	
29	{ Bill from cere to tip less than 0.75 inch <i>Circus melanoleucus</i> .	
	{ Bill from cere to tip more than 0.75 inch	30
30	{ Abdomen paler <i>Circus spilonotus</i> .	
	{ Abdomen darker <i>Circus aeruginosus aeruginosus</i> .	
31	{ Crested <i>Lophospizias trivirgatus rufitinctus</i> .	
	{ Not crested	32
32	{ Tarsus and toes thick; middle toe short	33
	{ Tarsus and toes slender; middle toe elongate	34
33	{ Upper parts pale grey, beneath banded in adults; larger <i>Astur badius poliopsis</i> .	
	{ Upper parts dark blackish grey, beneath uniform in adults; smaller <i>Astur soloënsis</i> .	

- 34 { Sexes nearly alike, always striped and barred beneath 35
 { Sexes different, adult male nearly uniform beneath *Accipiter gularis*.
- 35 { Very dark above; wing 10 inches or over *Accipiter nissus*, subsp.
 { Lighter above; wing under 10 inches *Accipiter affinis*.
- 36 { Tail feathers 14 *Gyps indicus tenuirostris*.
 { Tail feathers 12 37
- 37 { Nostrils round; bare parts red; a neck wattle *Otologyps calvus*.
 { Nostrils a slit; bare parts greyish brown; no neck wattle *Pseudogyps bengalensis*.

127. *Pandion haliaetus cristatus* (Vieill.).

Falco haliaetus, Linn., Syst. Nat. i, 1766, p. 129 (Europe).

Buteo cristatus, Vieill., Nouv. Dict. d'Hist. Nat. iv, 1816, p. 481
 - (New Holland).

Pandion haliaetus, A., p. 16 (Pakchan); C. ii, p. 221 (S.
 Tenasserim); F., p. 29 (Kedah).

Pandion haliaetus cristatus, I., p. 123 (Koh Lak).

Sparsely distributed on all coasts. There is not sufficient material extant to be certain whether the Siamese bird is to be referred to the typical or to the Australian race (*P. h. cristatus*). Not improbably both forms occur, but the differences are trivial. For the present we accept Gyldenstolpe's identification.

128. *Baza lophotes burmana* Selater.

Falco lophotes, Temm., Pl. Col., 1824, pl. 10 (Pondicherry).

Baza lophotes, A., p. 24 (Malewoon, etc.); B., p. 77 (Junk Seylon);
 F., p. 25 (Trang); G., p. 151 (Ratburi and Petchaburi); L.,
 p. 94 (Junk Seylon, Pulau Pangang Ghirbi).

Baza lophotes burmana, Selat., Bull. B. O. C. xli, 1920, p. 31
 (Malewoon).

♀. Tung Pran, Takuatung, W. Coast Siam. 14 February, 1919.
 (No. 3999).

♀. Koh Pra Tung, Takuapah, W. Coast Siam. 18 February, 1919.
 (No. 4104).

♂. Victoria Point, S. Tenasserim. 24 February, 1919. (No. 4187).

♂. Namchuk, Pakchan, Peninsular Siam. 26 February, 1919.
 (No. 4254).

♂. Tapli, Pakchan, Peninsular Siam. 6 March, 1919. (No. 4444).
 " Iris dark; bill and feet pale slate."

Total length, ♂ 308, 315, 320, ♀ 315, 310; wing, ♂ 236, 247,

235, ♀ 236, 227; tail, ♂ 150, 146, 145, ♀ 150, 140; tarsus, ♂ 27, 27, 27, ♀ 29, 24; bill from gape, ♂ 25, 25, 24, ♀ 25, 24 mm.

Lower Siam seems to be the headquarters of this Cuckoo-Falcon; elsewhere in the Peninsula it is a rare winter visitor. Selater's characters hold good in the large majority of our considerable series so far as the absence of chestnut from the scapulars is concerned, though one specimen from an island in Ghirbi Bay has this colour very pronounced. As regards the colour of the band posterior to the white breast, some birds have it black, a few almost pure chestnut, while in the majority it is mixed.

129. *Baza jerdoni* (Blyth).

Lophastur jerdoni, Blyth, Journ. Asiat. Soc. Bengal, xi, 1842, p. 464 (Malacca).

Baza sumatrensis, A., p. 25 (Pakchan); C. ii, p. 209 (S. Tenasserim).

Baza jerdoni, F., p. 25 (Trang and Langkawi Ids.); M. 1, p. 30 (S.E. and Central Siam).

We have dealt with this Cuckoo-Falcon fairly fully in a former paper (Ibis 1911, p. 25); no additional specimens have since been obtained in our area.

130. *Microhierax fringillarius* (Drap.).

Falco fringillarius, Drap., Dict. Class. d'Hist. Nat., vi, 1824, p. 412, pl. v. (Sumatra).

Microhierax fringillarius, A., p. 5 (Laynah to Bankasoon); B., p. 77 (Junk Seylon); E., p. 113 (Patani); F., p. 24 (Malay Peninsula); G., p. 151 (Ratburi and Petchaburi); H., p. 90 (Bandon).

One of the commonest Accipitrine birds in the present area.

131. (?) *Cerchneis tinnuncula saturata* (Blyth).

Tinnunculus saturatus, Blyth, Journ. Asiat. Soc. Bengal, xxviii, 1859, p. 277 (Moulmein).

Tinnunculus alaudarius, C. ii, p. 217 (Malewoon).

Cerchneis tinnunculus, F., p. 29 (Trang and Langkawi).

Falco tinnunculus saturata, L., p. 131 (Koh Lak).

Cerchneis tinnuncula dorriesi, Swann, Synopt. List Accipitres, iv, 1920, p. 146 (Siberia, wintering in India, Ceylon, Burma).

? *Falco interstinctus*, McClelland, P. Z. S., 1839, p. 154 (Assam).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♀. ad. Koh Lak, S. W. Siam. 6 April, 1919. (No. 5120).

"Iris dark brown; bill grey, black at tip, cere yellow; feet yellow."

Total length 365; wing 260; tail 185; tarsus 445; bill from gape 23 mm.

An immature female from Langkawi, shot in November, has the wing 245 mm.

It is impossible to say whether these specimens are really representatives of the resident tropical race, or migrants, as the material is insufficient. From the date, the Langkawi bird is probably true *C. t. tinnunculus*, or the form recently described by Swann, and that from Koh Lak, *T. t. saturatus*. Both birds, however, agree with Swann's race in their rather long tails. Colour affords no help, as both are in very worn and faded plumage.

Mr. Williamson obtained a female at Koh Lak on Dec. 28, 1921 also in worn plumage but rather pale. Total length 340 (in flesh), wing 247, tail 193 mm.

Inglis notes that the Kestrel breeds in Cachar, and it is therefore quite possible that *Falco interstinctus* McClelland (P. Z. S., 1839, p. 154), from Assam, is the name really applicable.

132. *Falco severus severus* Horsf.

Falco severus, Horsfield, Trans. Linn. Soc. xiii, 1822, p. 135 (Java);

Williamson, Journ. Nat. Hist. Soc. Siam, i, 1915, p. 198 (Bangkok).

Falco sp., I., p. 131 (Koh Lak).

Falco severus has been obtained near Bangkok by Williamson and we have examined the specimen therefrom. Gyldenstolpe doubtfully identifies a bird from the cliffs near Koh Lak with this species, and we have it from Cochin-China, so it will probably be found in Peninsular Siam.

Falco peregrinus calidus Lath.

Falco calidus, Latham, Ind. Orn. i, 1790, p. 41 (India)

Falco peregrinus, Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 30 (Bangkok).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

A not infrequent winter visitor to the Malay Peninsula and N. E. Sumatra, and certain to be found in South-west and Peninsular Siam.

133. *Machærhamphus alcinus* Westerm.

Machærhamphus alcinus, Westerm., Bijdr. t. d. Dierk. i, 1848, p. 29, pl. 12 (Malacca); A., p. 24 (Malewoon); C. ii., p. 206 (Malewoon); H., p. 90 (Bandon).

This Bat-Hawk, which is of crepuscular habits, will certainly be found to occur in the vicinity of most of the limestone hills that are so common in Lower Siam. The bird we obtained in Bandon was breeding on a lofty tree on the banks of the Bandon river.

134. *Pernis ptilorhynchus ptilorhynchus* (Temm.).

Buteo cristatus, Cuv., Vieill. Tabl. Enc. Meth. Orn., March 1823, p. 1225 (Java), (nec *Buteo cristatus*, Nouv. Dict. iv, 1816, p. 481).

Falco ptilorhynchus, Temm., Pl. Col. p. 44, July 1823 (Java and Sumatra).

Pernis brachypterus, Blyth, Journ. Asiat. Soc. Bengal, xxi, 1852, p. 436 (Megui?).

Pernis ptilorhynchus, C. ii, p. 207 (Tenasserim).

Pernis cristatus, F., p. 29 (Malay Peninsula); L., p. 130 (Koh Lak).

♂ imm. Tapli, Pakchan, Peninsular Siam. 8 March, 1919. (No. 4492).

"Iris dark hazel; bill black, base of lower mandible pinkish horn; feet pale yellow".

Total length 635; wing (in moult) 432; tail, 283; tarsus 56; bill from gape 43 mm.

The question of the species or races of Honey Buzzards in the Oriental region has never been seriously tackled, and the extreme variability makes the allocation of specimens a very difficult one. It appears to be an established fact that birds from India (except southern India), west of the Bay of Bengal, never have a marked and distinct occipital crest. They cannot therefore be assigned to *P. cristatus* (Cuv.) of Java, which has slight priority over *P. ptilor-*

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

hynchus Temm. (Java and Sumatra)*: the former was a uniform black bird, without a crest, but crested birds, also mainly black, are stated to occur in Java. We have examined about 20 birds from Sumatra, Borneo and the Malay Peninsula, which all have grey or black lores, and a lengthened occipital crest, but which vary in colour beneath, from an almost uniform white, through an almost uniform buffy brown, to birds barred and striped below with clear black and white, the black predominating. These birds agree exactly with descriptions and figures of *P. tweeddalii* Hume (Malay (Peninsula), which we cannot but regard as other than the very adult of *P. ptilorhynchus*. We have also two birds of a uniform brownish black, with no very lengthened crest, agreeing with the description and figures of *P. ptilorhynchus*, which we regard as a dimorphic form analogous with the case of *Sp. horsfieldi* and *Sp. caligatus*—forms of *Sp. limnaetus*.

On the strength of its lengthened crest the South Indian bird is probably entitled to sub-specific distinction as *P. c. ellioti*, but we have not examined specimens.

Immature birds of the non-crested Indian race appear to visit Siam and the Malay Peninsula in the winter months, and we possess specimens from Pulau Jemor, in the Straits of Malacca, and Kuala Lumpur. The name for the Continental and Northern Indian bird is *P. pt. ruficollis* (Less.).

135. *Ictinaetus malayensis*.

Falco malayensis, Reinw., Temm. Pl. Col. 1824, pl. 117 (Java and Sumatra, and Malay Archipelago).

Aquila pernigra, Hodgs., Journ. Asiatic Soc. Bengal, v, 1836, p. 227 (Central and Northern Nepal).

Ictinaetus malayensis, F., p. 22 (Trang).

*Nevertheless the name cannot be used, as *Buteo cristatus* had previously been applied to an Australian Osprey.

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

A strictly forest eagle, widely distributed but hard to procure. Swann (Synopt. List Accipitres, Part ii, 1919, p. 69) has revived Hodgson's name of *perniger* for the continental race. At the moment we have no Siamese or Malayan specimens available, but a male from Java, the type locality of *I. malayensis*, has the wing over 22 inches, which is more than Swann gives for *perniger*. The continental subspecies is, therefore, of rather dubious validity.

136. *Aquila maculata* (Gm.).

Falco maculatus, Gmelin, Syst. Nat. i, 1788, p. 258 (?).

Aquila clanga, C. ii, p. 186 (Tenasserim).

Aquila maculata, L., p. 125 (Koh Lak); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918 p. 27 (Bangkok).

We have seen no specimens of this eagle.

137. *Lophotriorchis kieneri* (Sparre).

Astur kieneri, Sparre, Mag. Zool. 1835, Aves, pl. 35. (E. Himalayas).

Lophotriorchis kieneri, G., p. 151 (Ratburi and Petchaburi).

Very rare everywhere; we have never seen a specimen in the flesh; the F. M. S. Museums possess an adult and an immature from near Kuala Lumpur, and we have examined an immature bird from the highlands of Sumatra.

138. *Spizaetus cirrhatus limnaetus* Horsf.

Falco limnaetus, Trans. Linn. Soc. xiii. 1821, p. 138 (Java).

Spizaetus limnaetus, A., p. ii (Bankasoon); E., p. 114 (Patani); F., p. 23 (Trang); H., p. 144 (Koh Pennan); L., p. 127 (Koh Lak); L., p. 93 (Ghirbi and Junk Seylon).

♀. Kandhuli, Chaiya, Peninsular Siam. 21 September, 1919.

E. Seimund (C.).

A fully adult bird, in the striped plumage, wing 415 mm. Commoner, and frequenting more open country, than the other species of the genus.

139. *Spizaetus nipalensis*.

Nisaetus nipalensis, Hodgson, Journ. Asiat. Soc. Bengal, v, 1836, p. 229, pl. 7 (Nepal).

Spizaetus nipalensis, F., p. 22 (Terutau).

Spizaetus nipalensis nipalensis, L., p. 126 (Hue Sai, S. W. Siam).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1892.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♀. ad. Tapli, Pakchan, Peninsular Siam. 3 March, 1919.
(No. 4399).

"Iris orange; bill black, base grey; feet pale yellow".

Total length 715; wing 438; tail 305; tarsus 105; bill from gape 50 mm.

This bird, shot in heavy jungle, is fairly adult, with the bars on the breast well developed and a crest of 100 mm. The bird from Terutau is immature and is entirely immaculate beneath.

W. L. Slater (Bull. Brit. Orn. Club, xl, 1919, p. 37) has recently described Southern Chinese birds, *Sp. n. fokiensis*, as smaller than the Himalayan form (wing, ♂ 419—425, ♀ 445 mm.), against an average, in the Himalayan typical specimens, of ♂ 450, ♀ 485 mm., and in all cases lacking the long crest feathers. Our specimen, above, apparently agrees in size with the Chinese bird, but has the crest-feathers fully developed. We do not care to establish yet a third race on a single adult specimen. Swann, however, (Synopsis Accipitres, 2nd ed., part ii, Jan. 1922, p. 119, note), records the fact that Chinese and Hainan birds have the long crest feathers when fully adult.

140. *Spizaetus alboniger* (Blyth).

Nisaetus alboniger, Blyth, Journ. Asiat. Soc. Bengal, xiv, 1845, p. 173 (Malacca).

Spizaetus alboniger, A., p. 12 (Bankasoon); C. ii, p. 191 (Mergui and Bankasoon); M. 1, p. 28 (Tung Song, Peninsular Siam).

This Harpy Eagle has only been recorded once from any part of Siam; we possess specimens from various parts of Perak. The bird frequents hilly regions covered with dense forest and is, therefore, very difficult to procure, though not really rare.

Elanus caeruleus caeruleus (Desf.).

Falco caeruleus, Desf., Mem. Acad. Sc., 1787, p. 503, pl. 15 (Algeria).

Elanus caeruleus caeruleus, I., p. 129 (Neighbourhood of Bangkok).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

We have specimens of this kite from Taiping, procured in August and October, and from Kuala Lumpur, in November, where it is a winter migrant: though not recorded from Southern Tenasserim, or from Peninsular Siam, it will almost certainly be found there.

Mr. W. J. F. Williamson informs us that this bird breeds near Bangkok, and is not a mere winter visitor, as surmised by Gyldenstolpe.

141. *Butastur indicus* (Gm.).

Falco indicus, Gmelin, Syst. Nat. i, 1788, p. 264 (Java).

Butastur indicus, A., p. 19 (Tavoy to Pakchan); C. ii, p. 197 (Malewoon); F., p. 23 (Langkawi Ids.); L., p. 93 (Ghirbi); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 28 (Bangkok).

♂ ad. Namchuk, Pakchan, Peninsular Siam. 25 February, 1919. (No. 4209).

"Iris chrome; bill, anterior half black, basal half pale yellow; feet pale yellow".

Total length 410; wing 318; tail 195; tarsus 53; bill from gape 34 mm.

We have specimens from as far south as Perlis, but the bird is everywhere rare and probably only a winter visitor.

Mr. Williamson's collection includes a fine male from Naihoot, Langsuen shot on 31st October, 1921.

"Iris deep yellow, bill black, feet deep yellow."

Total length 415, wing (dry) 298, tail 189 mm.

142. *Circaetus gallicus* (Gm.).

Falco gallicus, Gmelin, Syst. Nat. i, 1788, p. 259 (France).

Circaetus hypoleucus, L., p. 127 (Koh Lak).

This species, also, we have never seen from Siam though it has been obtained in Selangor (*vide* Butler), but the specimen is no longer in existence.

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| A. Hume & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905. |
| B. Müller, Die Ornith. der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i. | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

143. *Spilornis cheela bassus* (Forst.).

Falco bassus, Forst., Naturgesch. African Vog. 1798, p. 55 (Java).

Spilornis rutherfordi, A., p. 14 (*partim*, Pakchan); G. ii, p. 194 (*partim*, Tenasserim).

Spilornis cheela, D., p. 57 (Patelung and Patani).

Spilornis bacha, E., p. 114 (Patani).

Spilornis pallidus, F., p. 23 (Malay Peninsula); H., pp. 90, 144 (Bandon and Koh Samui).

? *Spilornis cheela rutherfordi*, M. 1, p. 28 (Tung Song, Peninsular Siam).

♂. Namchuk, Pakchan, Peninsular Siam. 25 February, 1919.

(No. 4208).

"Iris chrome; bill slate; feet dirty wax-yellow."

Total length 613; wing 389; tail 275; tarsus 90; bill from gape 44 mm.

After a careful comparison of large series of these Serpent-Eagles from Siam, Cochin-China, the whole of the Malay Peninsula, Java, Borneo and Sumatra, we are bound to state that we are now unable to recognize with certainty more than two forms, which are only separable on size, *viz.*, a large Indo-Chinese form of which the southern limit will be Koh Lak, to which the name *S. c. rutherfordi* has been given, and a smaller Malaysian bird to which, as Richmond shows (Proc. U. S. Nat. Mus., 35, 1909, p. 592, note) the name *Falco bassus* Forst., applies. In the Malayan area darker coloured as well lighter birds are found, more or less in the same locality, and to the former the name *S. bido* Horsf., from Java, applies. Javanese birds, however, can be matched with others from Sumatra and the Malay Peninsula, and Bornean birds (*S. pallidus* Walden) with skins from the Malay Peninsula and Sumatra. *Spilornis raja* Sharpe, from Borneo, is only the quite immature stage.

All the Oriental species, with the exception of the Philippine and Celebesian forms, are certainly subspecies, and the mainland races in physical contact exhibit very obvious gradation. The small Andaman and Nicobar birds are merely depauperated island forms.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

144. *Haliaetus leucogaster* (Gm.).

Falco leucogaster, Gmelin, Syst. Nat. i, 1788, p. 257 (New South Wales, Mathews).

Haliaetus leucogaster, A., p. 17 (Mergui, Malewoon); F., p. 23 (Malay Peninsula); H., p. 144 (Koh Samui and Koh Pennan); I., p. 128 (Koh Lak).

Cuncuma leucogaster, B., p. 76 (Junk Seylon).

Haliaetus leucocoryphus, F., p. 25 (Langkawi Ids.).

Common along the sea-coast everywhere.

Re-examination of the two specimens from Langkawi, formerly identified by us as *H. leucocoryphus*, convinces us that they are large immature specimens of this species. We have also examined the specimens on which rest the record of *H. leucocoryphus* from Borneo, and do not consider them also to be other than this species.

145. *Polioaetus ichthyaetus* (Horsf.).

Falco ichthyaetus, Horsf., Trans. Linn. Soc., xiii, 1821, p. 136 (Java).

Polioaetus ichthyaetus, A., p. 16 (Pakehan); E., p. 113 (Patani); F., p. 30 (Malay Peninsula); G., p. 151 (Ratburi and Petchaburi); H., p. 144 (Bandon); L., p. 94 (Junk Seylon and Ghirbi); Hume, Stray Feathers, ix, 1880, p. 120 (Panguga).

Our experience of this species is that it is never found in heavy jungle, but is fairly common on the sea coast and on rice fields.

146. *Polioaetus humilis humilis* (Müll. & Schleg.).

Falco humilis, Müll. & Schleg., Verhandelingen, Aves, 1839-44, p. 47, pl. 6 (Sumatra).

Polioaetus humilis, H., p. 90 (Bandon).

More of a jungle bird than the preceding. Peninsular Siam birds are probably to be referred to the Malayan race, *P. humilis*, rather than to the much larger bird from continental India and the Himalayas, *P. h. plumbeus* (Hodgs.).

147. *Haliastur indus intermedius* Gurney.

Haliastur indus intermedius, Gurney, Ibis, 1865, p. 28 (Java).

Haliastur indus, A., p. 22 (Mergui, Bankasoon); B., p. 76 (Junk Seylon); C. ii. p. 201 (Tenasserim); D., p. 58 (Pachung and Patani); G., p. 151 (Ratburi and Petchaburi).

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornithologie der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P.Z.S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

Haliastur intermedius, E., p. 114 (Patani); F., p. 24 (Malay Peninsula); H., p. 144 (Bandon Ids.); I., p. 129 (Koh Lak); L., p. 93 (Ghirbi).

Imm. Renong river, Peninsular Siam. 22 February, 1919. (No. 4167).

"Iris brown; bill and cere greenish lead; feet dirty yellowish grey."

The Brahminy Kite is common everywhere on the coasts, extending some distance inland over the rice fields.

We cannot agree with Selater (*vide* Baker, Journ. Nat. Hist. Soc. Siam, iv, 1920, p. 29) that *Haliastur indus intermedius* is confined to the Indo-Malayan Islands. Birds from the Malay Peninsula, nearly to Bangkok, are certainly nearer to this form, though in Central and Eastern Siam some approach is shown to the typical Indian race, *H. i. indus*.

148. *Milvus melanotis* (Temm. & Schleg.).

Milvus melanotis, Temm. & Schleg., Faun. Japon., 1845-50, p. 14. pls. v, v b; G., p. 151 (Ratburi and Petchaburi).

Milvus lineatus, Gray in Hardw. Ill. Ind. Zool., i, 1832, p. i. pl. 18 (China); I., p. 129 (Bangkok).

Mr. Williamson's collection includes a female from Koh Lak shot on December 26, 1921.

"Iris dark brown; bill dark horn, gape light bluish-grey, cere dirty white; legs pale bluish-white, claws dark horn".

Total length 664 (flesh); wing 493; tail, 295 mm.

149. *Milvus migrans govinda* Sykes.

Milvus govinda, Sykes, P. Z. S. 1832, p. 81 (Dekkan, India); G., p. 151 (Ratburi and Petchaburi).

Milvus affinis, A., p. 23 (Tavoy, Mergui); C. ii, p. 202 (Tenasserim).

Milvus migrans govinda, Gyldenstolpe, Ibis, 1920, p. 746 (Bangkok and neighbourhood).

A very rare visitor to the Malay Peninsula; we have a single specimen from near Taiping, Perak, shot in November 1910.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

150. *Circus melanoleucus* (Forst.).

Falco melanoleucus, Forster, Ind. Zool. 1781, p. 12, pl. ii.

Circus melanoleucus, A., p. 21 (Tavoy, Malewoon, and Tongka); B., p. 78 (Junk Seylon).

♂ ad. ♀ imm. Namchuk, Pakchan, Peninsular Siam. 24–25 February, 1919. (Nos. 4202, 4230).

“*Male*. Iris and feet chrome; bill black.” *Female*. Iris lemon; bill slate, cere and base yellowish green; feet pale yellow.

Total length, ♂ 442, ♀ 463; wing, ♂ 352, ♀ 364; tail, ♂ 217, ♀ 240; tarsus, ♂ 67, ♀ 80; bill from gape, ♂ 28, ♀ 32, mm.

This beautiful Harrier is a rare winter visitor to the southern parts of the Malay Peninsula as far south as Johore; Mr. Seimund has obtained several specimens in the swampy plains near Kuala Lumpur. It is common in Peninsular and S. W. Siam whence we have seen many specimens.

Circus spilonotus Kaup.

Circus spilonotus, Kaup in Jardine's Contr. Ornith. 1850, p. 59

(Asia); Williamson, Journ. Nat. Hist. Soc. Siam. iii, 1918, p. 29 (Bangkok, and Tachin river mouth).

Occurs in small numbers in the Malay Peninsula, but often confused with the preceding.

151. *Circus æruginosus æruginosus* (Linn.).

Falco æruginosus, Linn. Syst. Nat. i, 1766, p. 130 (Europe).

Circus æruginosus, A., p. 22 (Pakchan); B., p. 78 (Junk Seylon); F., p. 21 (Langkawi Ids.); I., p. 124 (Koh Lak).

2♂, ♀, Namchuk, Pakchan, Peninsular Siam. 25–26 February, 1919. (Nos. 4231, 4232, 4253).

“*Male*. Iris lemon; bill slate, cere and base yellowish green; feet pale yellow. *Female*. Iris yellow; bill black, cere and base greenish slate; feet dirty yellowish.”

Total length, ♂ 510, 535, ♀ 521; wing, ♂ 395, 403, ♀ 400; tail, ♂ 243, 250, ♀ 235; tarsus, ♂ 85, 85, ♀ 88; bill from gape, ♂ 40, 38, ♀, 32 mm.

A. Hume & Davison, Stray Feathers, vi, 1873.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

The Marsh Harrier was common on the rice fields bordering the upper reaches of the Pakchan Estuary: we did not meet with it elsewhere. In the winter, in suitable open spaces, it is fairly abundant as far south as Kuala Lumpur.

152. *Lophospizias trivirgatus rufitinctus* (McClell.).

Astur trivirgatus, Temm., Pl. Col. 1824, pl. 303 (Sumatra).

Spizaetus rufitinctus, McClelland, P. Z. S. 1839, p. 153 (Assam).

Lophospiza rufitinctus, A., p. 7 (Bankasoon).

Astur rufitinctus, Hume, Stray Feathers, viii, 1879, p. 152 (Kos-soom).

Lophospizias trivirgatus, H., p. 90 (Bandon); L., p. 93 (Junk Seylon).

♂, ♀ ad. Tasan, Chumpon, Peninsular Siam. 13-14 March, 1919. (Nos. 4566, 4587).

"Iris, male chrome, female orange; bill slate, tip black, cere and gape yellow; feet, male bright yellow, female pale yellow".

Total length, ♂ 413, ♀ 455; wing, ♂ 221, ♀ 252; tail, ♂ 193, ♀ 210; tarsus, ♂ 62, ♀ 62; bill from gape, ♂ 29 ♀ 31 mm.

The northern race of the Crested Goshawk differs from the typical Sumatra bird in its larger size and in having the breast of the male duller, less reddish. The wings of two nearly adult Sumatran birds measure 198 and 216 mm.; the second, though sexed male, is probably a female. A nearly adult male from Temengoh, N. Perak, is 202 mm., and a male from Bandon 227 mm.

The sexes are nearly similar in colour, but males appear to have the dark marks on the breast and belly paler than in the females.

153. *Astur badius poliopsis* (Hume).

Micronisus poliopsis, Hume, Stray Feathers, ii, 1874, p. 325 (North Pegu); B., p. 78 (Junk Seylon).

Astur poliopsis, A., p. 7 (Pakchan); F., p. 22 (Trang).

Astur badius poliopsis, I., p. 24 (Koh Lak); K., p. 87 (Koh Lak);

L. p. 93 (Junk Seylon and Pulau Panjang).

Common in open country, rare towards the Malayan border.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

154. (?) *Astur soloensis* (Horsf.).

Falco soloensis, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 137 (Java).

Astur soloensis, A., p. 8 (Malewoon and Mergui); F., p. 22 (Langkawi Ids.).

Apparently not common, very likely often confused with *Accipiter gularis*.

Sharpe (Cat. Birds Brit. Mus.) and Swann* (Synopt. List Accipitr. i, p. 25, 1920) are inclined to keep separate *A. soloensis* and *A. cuculoides* (Temm., Pl. Col. 1823, pl. 129). For the present, however, we are disposed to regard the latter, with its uniform tail, merely as the very adult bird. Both were originally described from Java, *A. soloensis* from Central, and *A. cuculoides* from Western, Java.

155. *Accipiter gularis* (Temm. & Schleg.).

Astur gularis, Temm. & Schleg., Faun. Jap. Aves, 1845-50, p. 5, pl. 2.

Accipiter gularis, Ogilvie Grant, Ibis, 1896, p. 104; Hartert, Nov. Zool., xvii, 1910, p. 211.

2 ♂ ad, 1 ♂, imm. Kandhuli, Chaiya, Peninsular Siam. 13-22 September, 1919. (E. Seimund collector).

The wings of these are:—ad. 172-168; imm. 159 mm.

The possession of specimens of the typical *A. virgatus* from Java, and others agreeing with it from Sumatra, enables us to state with some degree of confidence that the typical form of that species is not likely to occur on the continent of Asia, if *A. v. besra*, from Southern India and Ceylon, is maintained as distinct. Adult females of *A. virgatus* and *A. gularis* are totally distinct, but the males (if it is true that the form described as *A. rufotibialis* from Kina Balu, N. Borneo, is merely the adult of *A. virgatus*) approximate, except in size, the insular bird being much the smallest. It is, therefore

*This author has, however, sunk *A. cuculoides* as a synonym in the 2nd edition of the above quoted work (Part i, 1921, p. 41).

A. Hume, & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

doubtful if there is any *resident* form of the genus in the Malay Peninsula proper or in Peninsular Siam.

156. *Accipiter affinis* Hodgs.

Accipiter affinis, Hodgson in Gray's Zool. Misc. 1844, p. 81;
Gurney, List Diurnal Birds of Prey, pp. 39, 168-173 (Himalayas);
Hartert, Nov. Zool. xvii, 1910, p. 211.

♀ ad. Hat Sanuk, nr. Koh Lak, S. W. Siam. 14 April, 1919.
(No. 5302).

"Iris rich chrome; bill slate, culmen and tip black, cere greenish; feet yellow."

Total length 358; wing 202; tail 176; tarsus 61; bill from gape 23 mm.

This is the only definite record of an adult bird from the Malay Peninsula or from Peninsular Siam, but it is difficult to accumulate satisfactory material as the immense majority of birds visiting us on passage are quite immature and are referable to *A. gularis*. The present bird, when adult, is a close mimic of *Lophospizias trivirgatus rufilinctus*, from which it can be distinguished by the slender toes and the absence of the crest.

Accipiter nisus, subsp.

Accipiter nisus, subsp., Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 22 (Bangkok).

A subspecies of the European Sparrow Hawk occurs in Siam and probably just reaches our area, and there is one specimen, without precise location, in the F. M. S. Museums. The size of Williamson's specimens is rather large (wing 242, 252) and, according to Hartert (Vog. Palaarkt. Faun. ii, 1914, p. 1155), they would be referable to *A. nisus nisosimilis* Tickell (Journ. Asiat. Soc. Bengal, ii, 1833, p. 571, Borabhum).

Gyps indicus tenuirostris Hodgs.

Gyps tenuirostris, Hodgson in Gray's Gen. Birds, i, 1844, p. 6 (Nepal); Hume, Stray Feathers, vii, 1878, p. 326 (Nepal);
Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 26 (Bangkok).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

We have also a specimen from near Taiping, Perak. It may, therefore, occur in South-West and Peninsular Siam.

157. *Otogyps calvus* (Scop.).

Vultur calvus, Scop., Del. Flor. et. Faun. Insubr., ii, 1766, p. 85 (Pondicherry).

Otogyps calvus, A., p. i (Pakchan); E., p. 115 (Patani); G., p. 151 (Ratburi and Petchaburi); I., p. 132 (Koh Lak)

As the succeeding species, and associating with it, but rather rarer.

158. *Pseudogyps bengalensis* (Gm.).

Vultur bengalensis, Gmelin, Syst. Nat. i, 1788, p. 245 (Bengal).

Pseudogyps bengalensis, A., p. (Tenasserim); B., p. 78 (Junk Seylon); E., p. 115 (Patani); G., p. 151 (Ratburi and Petchaburi); I., p. 131 (General); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 27 (Bangkok).

Common everywhere; not extending south of Taiping, in the Malay Peninsula.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salangai, 1882.

C. Gates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

STRIGIFORMES.

OWLS.

1	{ Middle toe pectinate on inner margin	2
	{ Middle toe not pectinate on inner margin	3
2	{ Colour above rich bay, smaller	<i>Photodilus badius.</i>
	{ Colour above greyish yellow, larger	<i>Tyto flammea javanica.</i>
3	{ Facial disc and ruff well marked	4
	{ Facial disc and ruff ill marked	5
4	{ Upper surface spotted with white	<i>Strix orientalis orientalis.</i>
	{ Upper surface not spotted with white	<i>Strix indrance maingayi.</i>
5	{ Ear tufts well marked	6
	{ Ear tufts wanting	14
6	{ Size large, wing over 12 inches	7
	{ Size small, wing under 8 inches	10
7	{ Tarsi nearly naked	8
	{ Tarsi mainly feathered	9
8	{ Paler; under surface of tail with 5 cross bars	<i>Ketupa zeylonensis.</i>
	{ Darker; under surface of tail with 20 cross bars	<i>Ketupa ketupu.</i>
9	{ Smaller; wing less than 14.3 inches, under surface barred; no shaft stripes to feathers	<i>Huhua sumatrana.</i>
	{ Larger; wing more than 16 inches, under surface not barred; with shaft stripes to feathers	<i>Bubo coromandus klossi.</i>
10	{ Claws and bill pale clear yellow	11
	{ Claws and bill corneous or tinged with greenish	12
11	{ Larger; wing over 7 inches; forehead whitish	<i>Otus sagittata.</i>
	{ Smaller; wing under 6 inches; forehead not white	<i>Otus luciae.</i>
12	{ Feathering not extending to base of toes; more uniform above; smaller	<i>Otus scops malayana.</i>
	{ Feathering extending to base of toes; more blotched with black above; larger	13
13	{ Larger, wing over 5.6 inches; toes more feathered	<i>Otus bakkamoena lettia.</i>
	{ Smaller, wing less than 6.3 inches; toes less feathered	<i>Otus b. lempiji.</i>
14	{ Barred above	15
	{ Uniform above	16
15	{ Smaller, with a cervical collar	<i>Glaucidium brodiei brodiei.</i>
	{ Larger, without a cervical collar	<i>Glaucidium cuculoides cuculoides.</i>
16	{ Wing over 8 inches	17
	{ Wing less than 8 inches	<i>Ninox scutulata malaccensis.</i>
17	{ Darker above	<i>Ninox scutulata scutulata.</i>
	{ Paler above	<i>Ninox scutulata burmanica.</i>

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Photodilus badius (Horsf.).

Strix badius, Horsfield, Zool. Res. Java, 1824, plate (Java).

Photodilus badius, E., p. 112 (Perak); I., p. 122 (North Siam).

A bird of extreme rarity, of which we have only obtained three or four specimens from the southern parts of the Peninsula. It is certain to be found in Patani.

159. Tyto flammea javanica (Gm.).

Strix javanica, Gmelin, Syst. Nat. i, 1788, p. 295 (Java).

Strix flammea, G., p. 150 (Ratburi and Petchaburi).

Apparently common in Bangkok, but of very doubtful occurrence from much further south.

160. Strix orientalis orientalis (Shaw).

Strix orientalis, Shaw, Gen. Zool. vol. vii, part i, 1809, p. 257 (China).

Syrnium seloputo, A., p. 28. (Bankasoon); E., p. 112 (Patani); F., p. 30 (Trang); L., p. 94 (Junk Seylon); Williamson, Journ.

Nat. Hist. Soc. Siam, iii, 1918, p. 26 (Bandon).

Syrnium sinense, C., ii, p. 164 (South Tenasserim); D., p. 58 (Patani).

Strix orientalis orientalis, Oberholser, Proc. U. S. Nat. Mus., 52, 1917, p. 191.

Strix seloputo, M. I., p. 26 (Peninsular Siam).

Certainly commoner in the northern parts of the Peninsula than further south.

161. Strix indranee maingayi (Hume & Davison).

Syrnium maingayi, A., p. 27 (Malacca); F., p. 31 (Trang); Sharpe, P. Z. S. 1887, p. 470 (Malacca).

Strix indrani maingayi, M. I., p. 26 (Tung Song, Peninsular Siam.)

We have six specimens of this rare owl from Trang southwards to Selangor, all agreeing well with Hume's and Sharpe's descriptions. We cannot agree that both *S. i. newarense* and *S. i. maingayi* can occur in the same area, and the specimen referred to the former by Sharpe from the the Larut Hills (P. Z. S. 1887, p. 434) must be *S. i. maingayi*, as we have a specimen from within a few miles of the locality, which is certainly that race. The female

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonholser, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

from Chong, Trang, has the under surface rather less ochraceous than more southern birds.

162 *Ketupa zeylonensis* (Gm.).

Strix zeylonensis, Gmelin, Syst. Nat. i, 1788, p. 287 (Ceylon).

Ketupa zeylonensis, A., p. 33 (Tavoy, Pakchan); F., p. 30 (Trang); H., p. 90 (Bandon).

♂, ♀. Tapli, Pakchan, Peninsular Siam. 4-8 March, 1919 (Nos. 4421, 4488).

"Iris chrome; bill greenish-grey, tipped with black; feet dirty green."

Total length, ♂, 520; wing 420; tail 200; tarsus 88; bill from gape 48 mm.

Fairly common in ricefields, etc.

163. *Ketupa ketupu* (Horsf.).

Strix ketupu, Horsf., Trans. Linn. Soc. xiii, 1821, p. 141 (Java).

Ketupa javanensis, A., p. 33 (Tavoy to Malewoon); D., p. 58 Patani; F., p. 30 (Malay Peninsula); H., p. 91 (Bandon).

♀. Mamok, Pakchan, Peninsular Siam. 27 February, 1919. (No. 4298).

♂. Tapli, Pakchan, Peninsular Siam. 8 March, 1919. (No. 4514).

♀. Tasan, Chumpon, Peninsular Siam. 21 March, 1919. (No. 4752).

♀. Kandhuli, Chaiya, Peninsular Siam. 12 September, 1919.

"Iris chrome; bill black, cere greenish; feet dirty yellowish brown, pale greyish green."

Total length, ♂ 475, ♀ 477, 460; wing, ♂ 336, ♀ 365, 355; tail, ♂ 190, ♀ 200, 190; tarsus, ♂ 70, ♀ 70, 77; bill from gape, ♂ 43, ♀ 47, 53 mm.

We have examined series from Java, Borneo, Sumatra and the whole of the Malay Peninsula, and can distinguish no constant differences whatever, either in size or colouration, which can be associated with locality.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919.

(second part).

M.I. Baker, Journ. N.H. Soc. Siam, iv, 1920.

(third part).

164. *Huhua sumatrana* (Raffles).

Strix sumatrana, Raffles, Trans. Linn. Soc. xiii, 1822, p. 279 (Sumatra).

Bubo orientalis, A., p. 31 (Hankachin, Pakchan headwaters); C. ii, p. 153 (S. Tenasserim).

Huhua orientalis, F., p. 31 (Trang).

We have examined series from Sumatra, Borneo and the north and south of the Malay Peninsula and can detect no differences in size. Malay Peninsular and Sumatran birds are identical and will, therefore, have to be called *H. sumatrana*, though whether they are truly distinguishable from the typical *H. o. orientalis* Horsf., from Java, is, in the absence of specimens, still an open question. The Bornean birds do not differ in size from the others, but are less distinctly barred beneath. Schlegel* has named the bird from Banka, *B. o. minor*, which seems to be identical with the Sumatran and Malay Peninsular bird.

165. *Bubo coromandus klossi* Robinson.

Bubo coromandus klossi, Robinson, Journ. F. M. S. Mus. iv, 1911, p. 247 (Perak); K., p. 90 (Koh Lak); Herbert. Journ. N. H. S. Siam. ii, 1916, p. 58 (S. W. or Peninsular Siam); M. I, p. 26 (Peninsular Siam).

"Iris yellow; bill greenish horny, black at base; feet leaden."

Total length, ♂ 540, ♀ 545; wing, ♂ 399 (type) 380, ♀ 385; bill from gape, ♂ 46 (type) 43, ♀ 46 m.m.

This race is at present known from seven specimens only, ranging from Koh Lak in S. W. Siam to Malacca; it differs from the Indian form in its very much darker colour.

Otus sagittata (Cass.).

Ephialtes sagittatus, Cass., Proc. Ac. Nat. Sc. Philad. iv., 1850, p. 121 (Malacca).

Scops sagittatus, A., p. 35 (Malewoon); C., ii, p. 156 (Malewoon).

A species of extreme rarity which, however, is certain to be found in the area; we have a single male from Bukit Tangga, Negri Sembilan.

* Mus. Pays Bas, *Oti*. p. 13 (1862), p. 5 (1873).

A. Hume, & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

166. *Otus luciae* (Sharpe).

Heteroscoops luciae, Sharpe, Ibis, 1888, p. 478 Kina Balu, Borneo).

Heteroscoops vulpes, O. Grant, Bull. Brit. Orn. Club. xix, 1906, p. 11 (Pahang); H., p. 91 (Bandon).

Our single female from Bandon differs in certain respects from the rest of our series from the more southern parts of the Peninsula, notably in the colour of the flanks and abdomen, but we are not as yet prepared to name it, nor do we think that the separation of the Malayan and Bornean birds is justified on the existing material.

167. *Otus scops malayana* (Hay).

Scops malayana, Hay, Madras Journ. L. S., 1845, xiii, pt. 2., p. 147 (Malacca); B., p. 76 (Junk Seylon); F., p. 31 (Trang, Langkawi Ids.).

Otus scops malayana, J., p. 145 (Langkawi Ids.); L., p. 94 (Junk Seylon.).

Scops pennatus, A., p. 34 (Mergui).

The Little Owl is fairly common in the north of the Peninsula and is met with in two phases, a greyish brown and a clear rufous. The synonymy is so complicated, and the question of local races so obscure, that we have placed all our specimens under Hay's name, though it is possible that other or earlier titles may properly apply.

168. *Otus bakkamoena lettia* (Hodgs.).

Scops lettia, Hodgson, Asiat. Res. xix, 1836, p. 176 (Nepal).

Otus bakkamoena lettia, J., p. 145 (Pulau Dayang Bunting, Langkawi Ids.).

Probably only a migrant or winter visitor in the extreme south of Peninsular Siam, but certainly separable from *O. b. lempiji* on account of its much larger size. It is this form which is common in Bangkok.

169. *Otus bakkamoena lempiji* (Horsf.).

Scops lempiji, Horsf., Trans. Linn. Soc. xiii, 1821, p. 140 (Java);

F., p. 31 (Langkawi Ids.); H., p. 91 (Bandon).

Otus bakkamoena lempiji, J., p. 145 (Langkawi Ids.).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

This is a southern resident form which probably extends well up Peninsular Siam, and also occurs in S. E. Siam and Cambodia.

170. *Glaucidium brodiei* (Burton).

Noctua brodiei, P. Z. S. 1835, p. 152 (Himalaya region).

Glaucidium brodiei, A., p. 39 (Tavoy); H., p. 91 (Kao Nong, Bandon).

♂, ♀. Tapli, Pakchan, Peninsular Siam. 4 March, 1919. (Nos. 4407-4408).

"Iris yellow; bill greenish-yellow, tip yellow; feet greenish yellow."

Total length, ♂ 148, ♀ 175; wing, ♂ 89, ♀ 101; tail, ♂ 58, ♀ 64; tarsus, ♂ 19, ♀ 20; bill from gape, ♂ 15, ♀ 15 mm.

The above specimens, and one from Bandon, have the top of the head broadly and clearly barred. In five specimens, from the mountains of Perak and Selangor, these bars are much less defined and smaller, almost assuming the appearance of a spot on either side of the shaft. There is also a tendency to a smaller number of tail bars. They are not referable to *G. b. sylvaticum* (Bp.), from the mountains of Sumatra and Borneo, which has a white cervical collar.

171. *Glaucidium cuculoides cuculoides* (Vigors).

Noctua cuculoides, Vigors, P. Z. S. 1830, p. 8 (Himalayas).

Glaucidium cuculoides, A., p. 37 (Tavoy and Estuary); G., p. 150 (Ratburi and Petchaburi); I., p. 122 (Hat Sanuk, nr. Koh Lak); K., p. 89 (Koh Lak).

Athene cuculoides brugeli, Parrot, Ornith. Geschell. in Bayern, viii, 1907, p. 104 (Bangkok).

Glaucidium cuculoides cuculoides, M. I., p. 27 (Maprit, S. W. Siam).

6 ♂. Koh Lak. 1-9 April, 1919. (Nos. 4924, 5085, 5176-7 5196-7).

3 ♂, 1 ♀. Hat Sanuk, nr. Koh Lak. 13-16 April, 1919. (Nos. 5267, 5287, 5340, 5345).

"Iris chrome yellow; bill greenish, yellowish at tip, bluish at base; feet greenish yellow."

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Total length, ♂ 230, 223, 210, 222, 218, 218, 245, 224, 233, ♀ 228; wing, ♂ 136, 145, 144, 142, 150, 152, 151, 146, 142, ♀ 140; tail, ♂ 82, 84, 85, 86, 90, 90, 93, 85, 84, ♀ 85; tarsus, ♂ 27, 27, 26, 24, 26.5, 24, 25, 25, ♀ 25; bill from gape, ♂ 21, 20, 21.5, 20, 21.5, 22, 21, 21, ♀ 21 mm.

On dimensions, etc., our large series are identical with the single specimen described by Parrot as above. We do not, however, see that he has made out a case for separating it from the N. W. Himalayan bird, and therefore have not used his name.

172. *Ninox scutulata malaccensis* (Eyton).

Athene malaccensis, Eyton, Ann. & Mag. Nat. Hist., xvi, 1845, p. 228 (Malay Peninsula).

Ninox scutulata malaccensis, J., p. 144 (Langkawi Ids); L., p. 94 (Junk Seylon).

The smaller darker resident form, common throughout the area.

173. *Ninox scutulata scutulata* (Raffles).

Strix scutulata, Raffles, Trans. Linn. Soc. xiii, 1822, p. 280 (Sumatra).

Ninox scutulata scutulata, J., p. 143 (Langkawi Ids; Pulau Lontar).

This is the larger migratory form, which is common on the islands of the Straits of Malacca during the winter months.

174 *Ninox scutulata burmanica* (Hume).

Ninox burmanica, Hume, Stray Feathers, iv, 1876, p. 285 (Pegu and Tenasserim); A., p. 40 (Mergui); *Ninox burmanica*, type region restricted to Tenasserim.

Ninox scutulata, C. ii, p. 159 (Tenasserim).

Ninox scutulata burmanica, K., p. 89 (Inner Gulf of Siam).

Ninox scutulata (subsp?); L., p. 121 (North Siam).

A bird larger and paler than *N. s. malaccensis*, found as yet only in the extreme north of our area and with difficulty separable from *N. n. scutulata*.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.
J. Robinson, Journ. F. M. S. Mus. vii, 1917.
K. Kloss, Ibis, 1918.
L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.
M. Baker, Journ. N. H. Soc. Siam, iii, 1919.
M. Baker, Journ. N. H. Soc. Siam, iii, 1919.
M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
M. I. Baker, Journ. N. H. Soc. Siam, (first part).
M. I. Baker, Journ. N. H. Soc. Siam, (second part).
M. I. Baker, Journ. N. H. Soc. Siam, (third part).

PSITTACIFORMES.

PARROTS.

1	{ Tail square ..	..	..	..	..	2
	{ Central tail feathers elongated ..	..	..	..	..	4
2	{ Wing coverts uniform green ..	..	..	..	..	3
	{ Wing coverts not uniform green ..	..	..	..	<i>Psittinus cyanurus cyanurus.</i>	
3	{ Both mandibles black ..	..	..	..	<i>Loriculus galgulus.</i>	
	{ Both mandibles orange ..	..	..	..	<i>Loriculus vernalis.</i>	
4	{ Crown green ..	..	..	..	<i>Palaeornis longicauda.</i>	
	{ Crown not green ..	..	..	..	..	5
5	{ No frontal black band reaching to eyes ..	..	..	..	<i>Palaeornis cyanocephala rosa.</i>	
	{ A frontal black band reaching to eyes ..	..	..	..	<i>Palaeornis alexandri fasciata.</i>	

175. *Psittinus cyanurus cyanurus* (Forst.).

Psittacus cyanurus, Forst., Faun. Ind. 1795, p. 6 (ex. Latham, Gen. Syn. Suppl. 1, p. 66, 1787, Malacca).

Psittinus incertus, A., pp. 120, 500 (Tavoy to Malewoon); C. ii, p. 501; D., p. 76 (Patani).

Psittinus malaccensis, E., p. 112 (Patani).

Seeing that it is common in Tenasserim, as far south as Tavoy, it is probable that it will be found quite abundant in Peninsular Siam. The species, however, like *Palaeornis longicauda*, though common in a district at one time may suddenly disappear for years. At present the only specimens on record are:—two males and a female, all obtained at Biserat, Jalor, in Patani, one by the Skeat expedition in June 1899, and two by Robinson in July and October 1901. We have specimens also from Pelarit, Perlis.

“Male. Iris red; upper mandible red, lower greenish; feet greenish. Female. Iris pale green with an outer ring of white; bill yellowish horn, darker on upper mandible; feet pale sage green.”

Mr. Williamson's collector also obtained two females and a male at Nailhoot near Langsuan in November 1921. He records the iris of all three as “yellowish white”. Total length, ♂ 190, ♀ 180, 175 mm.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

176 *Loriculus galgulus* (Linn.).

Psittacus galgulus, Linn., Syst. Nat. i, 1766, p. 150 (India).

Loriculus galgulus, D., p. 73 (Patelung and Patani); E., p. 112 (Patani).

The only records from Peninsular Siam are, 2 immature males obtained by Robinson at Biserat, Jalor, in July 1901, and an unsexed bird from Patelung obtained by the Skeat expedition in April 1899; the latter was not improbably a cage bird. Mr. Williamson's collection also contains a male and an immature female from Bangnara, Patani State, shot on 29th July, 1916. We have also secured it at Pelarit, Perlis, in October 1911 within five or six miles of the Siamese boundary, so the species is probably quite common in the extreme south of Peninsular Siam; except for these records it has not been obtained north of Province Wellesley.

177. *Loriculus vernalis* (Sparrm.).

Psittacus vernalis, Sparrm., Mus. Carls. t. 29, 1787 (Unknown).

Loriculus vernalis, A., pp. 120, 500 (Tavoy to Malewoon); C., ii, p. 146 (Tenasserim to Tongka); F., p. 32 (Trang); H., p. 91 (Bandon).

Coryllis vernalis, B., p. 76 (Puket or Junk Seylon); M., p. 443 (Peninsular Siam).

♀. Tung Pran, Takuatung, W. Peninsular Siam. 14 February, 1919. (No. 4020).

♂, ♀. Tapli, Pakchan Estuary, Peninsular Siam. 2-8 March, 1919 (Nos. 4348, 4501).

♂ ♂. Tasan, Chumpon, Peninsular Siam. 15-20 March, 1919 (Nos. 4612, 4712).

"Iris white; bill orange; feet yellow." Total length, ♂ 142, 140, 128, ♀ 142, 146; wing, ♂ 90, 88, 89, ♀ 87, 93; tail, ♂ 41, 48, 43, ♀ 42, 43; tarsus, ♂ 9, 10, 11, ♀ 10, 10; bill from gape, ♂ 13, 12, 11, ♀ 11.5, 11.5 mm.

Sparingly but widely spread over the area; quite common at Takuatung among flowering shrubs near the beach; not met with in

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

such large flocks as *L. galgulus*. We have also examined a male shot in November 1921, at Naihoot, Langsuen, by Mr. Williamson's collector. "Iris yellowish-white; bill red; feet deep yellow. Length 135 mm."

***Palaeornis* longicauda* (Bodd.).**

Psittacus longicauda, Bodd., Tabl. Pl. Encl. 1783, p. 53 (Malacca).

It is probable that the Malay Green-headed Parroquet will be found in the southern districts of the Patani province. It has been recorded from Ulu Selama in North Perak (Bonhote, P. Z. S. 1901, p. 76), and is therefore inserted in our "key."

178. *Palaeornis cyanocephalus rosa* (Bodd.).

Psittacus rosa, Bodd., Tabl. Pl. Enl. 1783, p. 53 (India).

Palaeornis cyanocephalus, A., p. 118 (Tavoy); C., ii, p. 145.

Palaeornis rosa, G., p. 150 (Ratburi and Petchaburi); K., p. 90 (Koh Lak).

Koh Lak is the southernmost known limit of the eastern form of the Blossom-headed Parroquet, which is also found in Southern Annam.

179. *Palaeornis alexandri fasciata* (P. L. S. Müll.).

Psittacus fasciatus, P. L. S. Müll., Syst. Nat. Suppl. p. 74 of 1776.

Palaeornis melanorhynchus, A., p. 120 (Tavoy to Mergui).

Palaeornis fasciata, C., ii, p. 143 (Tenasserim); G., p. 150 (Ratburi and Petchaburi); Herbert, Journ. Nat. Hist. Siam, i, 1914, p. 118 (Chiengrak, nr. Bangkok).

♀. imm. Koh Pra Tang, Takuapah Inlet, W. Peninsular Siam. 17 February, 1919. (No. 4081).

"Iris whitish; bill black; feet dirty greenish white."

Total length, 272; wing 145; tail 90 (imp.); tarsus 15; bill from gape 22 mm.

The specimen, which is very young has a narrow black line from eye to eye across the forehead, which is lavender in front,

*Though Oberholser is doubtless correct in his contentions, we cannot bring ourselves to use *Conurus* as the name for this genus of parrot. *Conurus* is too well known for a large Neotropical genus.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

crown green, sides of face lavender-grey with broad black mandibular stripes, no yellowish green scapular patches; under wing-coverts green.

This example constitutes a southerly record for the species which has not hitherto been found south of the Isthmus of Kra.

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|---|---|
| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| 56, No. 2, 1916. | (first part). |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| K. Kloss, Ibis, 1918. | (second part). |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. |
| iii, 1919. | (third part). |

PODARGIDAE.

FROGMOUTHS.

180. *Batrachostomus affinis* Blyth.

Batrachostomus affinis, Blyth, Journ. Asiat. Soc. Bengal. xvi, 1847, p. 1180 (Malacca); G., p. 150 (Ratburi and Petchaburi).

♂. Tasan, Chumpon, Peninsular Siam. 13 March, 1919. (No. 4555).

"Iris pale yellow; bill pinkish horn; feet pale pinky white."

Total length 228; wing 121; tail 125; tarsus 14; bill from gape 33 mm.

Shot in heavy evergreen jungle.

A bird marked female in Mr. Williamson's collection from Naihoot, Langsuen, shot on 6th November 1921, is almost uniform foxy red, except for the white, black-bordered spots on the scapulars and a band of similar spots on the breast and upper abdomen.

"Iris yellowish-white; bill above yellowish-brown and below yellow; legs flesh. Length 220 mm."

For the present we refer it to this species.

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornithologie der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fascioli Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

CORACIIDAE.

ROLLERS.

1	Bill compressed, black	<i>Coracias affinis</i> .	2
	Bill depressed, vermilion .. ..	.. ..
2	Outer secondaries largely blue	<i>Eurystomus orientalis calonyx</i> .	
	Outer secondaries largely black	<i>Eurystomus orientalis orientalis</i> .	

181. *Coracias affinis* McClell.

Coracias affinis, McClelland, P. Z. S. 1839, p. 164 (Assam); A., p. 72 (Tavoy and S. Tenasserim); W. Davison (*in litt.* Junk Seylon and Kussoon); E., p. 109 (Patani); G., p. 150 (Ratburi and Petchaburi); I., p. 117 (Koh Lak); K., p. 91 (S. W. Siam) *Coracias affinis theresiae*, Parrot, Verhandl. Ornith. Gesellsch. Bayern. viii, 1911, p. 97 (Bangkok).

♂, ♀. Koh Lak, S. W. Siam. 3-4 April, 1919. (Nos. 5003-5056).

"Iris dark hazel; bill black; feet dirty yellow."

Total length, ♂ 320, ♀ 310; wing, ♂ 187, ♀ 172; tail, ♂ 120, ♀ 118; tarsus, ♂ 25, ♀ 25; bill from gape, ♂ 42, ♀ 45 mm.

A male from Nong Khai, S. W. Siam, 31 December, 1917, measures, total length 315, wing 187; and two unsexed specimens from Patani, dated April 1916, wing 184, 182 mm. All in Mr. Williamson's collection.

The principal character for Parrot's race, *C. a. theresiae* (*loc. cit. supra*), is not borne out by the considerable series we have examined from Siam and Indo-China.

182. *Eurystomus orientalis calonyx* Sharpe.

Eurystomus calonyx, Sharpe, P. Z. S. 1890, p. 551 (Himalayan Terai); E., p. 110 (Patani); F., p. 32 (Trang). *Eurystomus orientalis calonyx*, L., p. 95 (Ghirbi, Junk Seylon, Pulau Panjang); M., p. 432 (Peninsular Siam).

♂. Tung Pran, Takuatung, W. Siam. 14 February, 1919. (No. 4015).

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

"Iris dark hazel; bill and feet vermilion, former tipped black."

Total length 305; wing 202; tail 110; tarsus 20; bill from gape 33 mm.

The fact that these two races are often found in the same place, commented on by Stuart Baker (*loc. cit. supra*) is, of course, explained by the fact that *E. o. orientalis* is a resident breeding form, and *E. o. calonyx* a migratory race breeding in North China and the Himalayas (?).

183 *Eurystomus orientalis orientalis* (Linn.).

Coracias orientalis, Linn., Syst. Nat. 1766, p. 159 (India).

Eurystomus orientalis, D., p. 68 (Patani); E., p. 110 (Patani); F., p. 32 (Trang); p. 144 (Koh Samui and Koh Pennan); J., p. 151 (Trang); L., p. 95 (Ghirbi).

1 ♂. Koh Rah, Takuapah. 17 February, 1919. (No. 4062).

3 ♀. Namchuk, Pakchan, Peninsular Siam. 25-26 February, 1919. (Nos. 4239, 4249-50).

♂, ♀. Tapli, Pakchan, Peninsular Siam. 2nd March, 1919 (No. 4341, 4342) 2 ♂, 2 ♀. Hat Sanuk, nr. Koh Lak, S. W. Siam. 14-17 February, 1919. (Nos. 5289, 5349, 5350, 5352).

"Iris dark; bill vermilion tipped black; feet vermilion."

Total length, ♂ 300, 276, 274, 290, ♀ 278, 283, 278, 290; wing, ♂ 183, 177, 184, 186, ♀ 183, 186, 192, 172; tail, ♂ 107, 103, 106, 105, ♀ 107, 104, 100, 103; tarsus, ♂ 20, 22.5, 18.5, 20, ♀ 19, 19, 21, 21.5; bill from gape ♂ 39.5, 38, 38, 39, ♀ 35, 37, 41, 38 mm.

It is impossible to say to which race may belong the specimens recorded as *Eurystomus orientalis* from Tavoy to Bankasoon (A., p. 73), Junk Seylon (B. p. 41) and South Tenasserim (C. ii. p. 71).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Boulhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

ALCEDINIDAE.

KINGFISHERS.

1	{ With three toes	2
	{ With four toes	3
2	{ Mantle bluish or black	<i>Ceryx t. tridactylus.</i>
	{ Mantle reddish orange	<i>C. r. rufidorsus.</i>
3	{ Plumage black and white	<i>Ceryle rudis leucomelanura.</i>
	{ Plumage not black and white	4
4	{ Tail shorter than culmen	5
	{ Tail longer than culmen	8
5	{ Wing more than 3.5 inches	<i>Alcedo euryzona.</i>
	{ Wing less than 3.2 inches	6
6	{ Ear-coverts ferruginous	<i>A. althis bengalensis.</i>
	{ Ear-coverts blue	7
7	{ Scapulars deep blue	<i>A. m. meninting.</i>
	{ Scapulars black	<i>A. m. scintillans.</i>
8	{ Plumage barred	<i>Carcineutes pulchellus.</i>
	{ Plumage not barred	9
9	{ Wing 5.5 inches or more	10
	{ Wing at most 5 inches	12
10	{ Wings brown	<i>Ramphalcyon amauroptera.</i>
	{ Wings blue	11
11	{ Pileum paler	<i>R. capensis burmanica</i>
	{ Pileum darker	<i>R. c. malaccensis.</i>
12	{ With no white on under surface	13
	{ Under surface partly or entirely white	14
13	{ Head and mantle uniform cinnamon rufous	<i>Halcyon c. coromanda.</i>
	{ Head greenish, mantle blue or green	<i>H. conereta.</i>
	{ Head black	<i>H. pileata.</i>
14	{ Head blue	<i>H. chloris.</i>
	{ Head chestnut	<i>H. smyrnensis fusca.</i>

184. *Ramphalcyon amauroptera* (Pearson).

Halcyon amauropterus, Pearson, Journ. Asiat. Soc. Bengal, x, 1841, p. 635 (Calcutta).

Pelargopsis amauroptera, A., p. 73 (Mergui to Malewoon); B., p. 46 (Junk Seylon); C. ii, p. 78 (Tenasserim to Junk Seylon); F., p. 33 (Trang and Langkawi); J., p. 146 (Langkawi and Terutau).

Ramphalcyon amauroptera, Oberholser, Proc. U. S. Nat. Mus. xxxv, 1909, p. 661.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, This, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

♂. Tung Pran, Takuatung, W. Peninsular Siam, 12 February 1919 (No. 3956).

"Iris dark; bill and feet blood red".

This Kingfisher is never found far from salt water, but is fairly common along the coasts and islands of W. Peninsular Siam and as far south as the Langkawi group: we are not aware that it has been met with on the east coast of the Peninsula.

185. *Ramphalcyon capensis burmanica* (Sharpe).

Pelargopsis burmanica, Sharpe, P. Z. S. 1870, p. 67 (Toung-hoo, Burma); A., p. 73 (Tavoy to Bankasoon); C. ii, p. 78; (Tenasserim and southwards).

Pelargopsis fraseri, E., p. 111 (Pattani?).

Ramphalcyon capensis burmanica, Oberholser, Proc. U. S. Nat. Mus. xxxv, 1909, p. 670.

Pelargopsis malaccensis, H., p. 145 (Koh Penman); B., p. 46 (Junk Seylon?).

Pelargopsis capensis malaccensis, I., p. 114 (Koh Lak).

Pelargopsis gurali burmanica, Williamson, Journ. N. H. S. Siam, ii, 1917, p. 334 (Bangkok; S. W. Siam).

Pelargopsis javana malaccensis, Parrot, Verh. Orn. Ges. Bayern, 8, 1908, p. 112 (Petchaburi).

♂. Namchuk, Pakchan, Peninsular Siam, 25 February 1919 (No. 4234).

2 ♂. Koh Lak, S. W. Siam, 3 April 1919 (Nos. 4998-9).

♀. Hat Sanuk, S. W. Siam, 15 April 1919 (No. 5317).

♂. Kandhuli, Chaiya, Peninsular Siam, 13 September 1919 (E. Seimund).

"Iris dark, eyelid crimson; bill blood red, darker at tip; feet coral, claws dark horn."

Total length ♂, 372, 365, 373; ♀, 373; wing ♂, 141, 152, 148; ♀, 152; tail, ♂ 100, 108, 112; ♀, 113; tarsus ♂, 16, 18.5, 18; ♀, 16; bill from gape ♂, 93, 94, 94; ♀, 94 mm.

All this series have a dull clay-coloured cap, washed with green but quite unstreaked. Beneath, the colour is somewhat rich ochraceous rufous, deeper in tint than specimens of the Peninsula

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

from Kedah to Johore. On the whole it appears best to follow the majority of authors, including Dr. Sharpe, and assign the series to *R. c. burmanica*. We are, however, not entirely convinced that this form should not be regarded as restricted to a still more northerly habitat, seeing that the type came from Tounghoo and that these birds are merely another intermediate link having stronger affinities with *R. c. burmanica* than with *R. c. malaccensis*, just as the reverse is the case with birds from localities further down the Peninsula. It is possible that individuals from the vicinity of Bandon and Junk Seylon and to the southward should all be listed as *malaccensis* (Sharpe), thus bringing that race into the area here dealt with.

186. *Ceryle rudis leucomelanura* Reichenb.

Ceryle leucomelanura, Reichenb., Handl. Alced., 1851, p. 21, Taf. 409B, fig. 3488.

Ceryle varia, G., p. 150 (Rathburi and Petchaburi); Herbert, Journ. N. H. S. Siam, i, 1914, p. 56 (neighbourhood of Bangkok).

Ceryle rudis leucomelanura, Williamson, Journ. N. H. S. Siam, ii, 1917 p. 329 (Bangkok); Gairdner, Journ. N. H. S. Siam, iii, 1919, p. 229 (Petchaburi river); M., p. 433. (Bangkok).

Will not improbably be found as far south as Koh Lak, in S. W. Siam.

187. *Alcedo atthis bengalensis* (Gm.).

Alcedo bengalensis, Gm., Syst. Nat. i, 1788, p. 450 (Bengal); A., p. 81 (S. Tenasserim); B., p. 44 (Junk Seylon) C. ii, p. 72; F., p. 32 (Peninsular Siam).

Alcedo ispida, G., p. 150 (Rathburi or Petchaburi).

Alcedo ispida bengalensis, I., p. 114 (Koh Lak); J., p. 146 (Trang; Langkawi; Terutau); K., p. 90 (Tachin; Koh Lak); L., p. 95 (Junk Seylon, etc.); Williamson, Journ. N. H. Soc. Siam, ii, 1917, p. 331 (Bangkok; Peninsular Siam).

♀. Tung Pran, Takuatung, W. Peninsular Siam, 12 February 1919 (No. 3957).

♂. Tasan, Chumporn, Peninsular Siam, 16 March 1919 (No. 4632).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

♂. Koh Lak, Rajburi, S. W. Siam, 7 April 1919 (No. 5136).

♀. Hat Sanuk, Rajburi, S. W. Siam, 17 April 1919 (No. 5351).

"Male, iris dark; bill black, reddish at base of mandible only; feet vermilion, claws black. Female, with the lower mandible almost entirely dull red".

Total length ♂, 165, 164; ♀, 161, 168; wing ♂, 70, 68; ♀, 70, 70; tail ♂, 35, 33; ♀, 38, 38; tarsus ♂, 10, 9; ♀, 9, 9; bill from gape ♂, 45, 47; ♀, 45, 46 mm.

Universally distributed in suitable localities.

183. *Alcedo euryzona* Temm.

*Alcedo euryzona**, Temm, Pl. Col. livr. 86, text (Java); F., p. 33 (Trang); H., p. 91 (Bandon).

Alcedo nigricans, Blyth, Journ. Asiat. Soc. Bengal, xvi, 1847, p. 1180 (Malacca); A., pp. 81, 496 (Nwalabo and Bankison).

♀ subad. Chong, Trang, 18 December 1909, F. M. S. Mus. No. 461/10.

♂ ad. Patelung - Trang boundary, 25 December 1909, F.M.S. Mus. No. 463/10.

♂ ad., ♀ ad. Kao Nawng, Bandon, 1200-1500 ft., 17-18 June 1913.

"Male vix ad. Iris dark; bill black, whitish at tip; feet flesh. Female ad. Iris dark hazel; upper mandible dark horn, lower reddish; feet flesh.

The males above cited, and two others from Pahang, are all very nearly adult though two have pale tips to the bill: they differ from a male from Saribas, S. W. Sarawak, in having the flanks more or less washed with rufous and the blue tips to the feathers of the crown and wing coverts more conspicuous. The Bornean bird is, however, an extremely adult one and we do not think that it would be wise to admit *A. nigricans* Blyth, founded on a female, as a mainland race of *A. euryzona*.

**Spelt cryzona* in the original description.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Inselalunga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

189. *Alcedo meninting meninting* Horsf.

Alcedo meninting, Horsfield, Trans. Linn. Soc. xii, 1821, p. 172 (Java); B., p. 45 (Junk Seylon); E., p. 111 (Patani); F., p. 32 (Perutau); L., p. 95 (Junk Seylon).

Alcedo meninting meninting, Baker, Bull. Brit. Orn. Club, xxxix, 1918, p. 37 (Malay Peninsula, north to Bunkasoon).

We have not sufficient material available to discuss in detail Mr. Stuart Baker's recent article on this Kingfisher (*loc. cit. supra*, pp. 37-40). The specimens referred to above are identical with birds from the southern Malay Peninsula, south to Johore, and have the scapulars deep blue, not black. All of our considerable series from the Malay Peninsula, south to Johore, Borneo and Sumatra, differ from a pair of adults from Java in having the blue of the upper surface deeper and less turquoise. If the distinction can be maintained, and judging from analogy it is probably a real one, our birds will have to be called *Alcedo meninting verreauxi* De la Berge, Rev. et Mag. de Zool. (2), iii, 1851, p. 305, pl. 9 (Borneo) — the bird described and figured being an immature female.

190. *Alcedo meninting scintillans* Stuart Baker

Alcedo beavani (part.), A., pp. 84, 499 (Tavoy to Malewoon).

Alcedo meninting scintillans, Stuart Baker, Bull. Brit. Orn. Club, xxxix, 1918, p. 38 (type locality Bankasoon, and between Lat. 10° and 16° N.); M., p. 433 (Peninsular Siam).

Stuart Baker has separated this southern Tenasserim and southern Siam bird on account of the scapulars being black in adult and immature birds alike. We have not yet seen specimens from the area now dealt with. Baker refers one specimen from Klong Wang Hip (Lat. 8° N.) to this new race to which, however, our specimens from Junk Seylon, in about the same latitude, cannot be attached.

191. *Ceyx tridactylus tridactylus* (Pall.).

Alcedo tridactyla, Pallas, Spic. Zool. vii, 1760, p. 10, ab. 2. fig. 1 (India: Assam restricted).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(second part).
(third part.).

Ceyx tridactyla, A., pp. 80, 499 (Tavoy to Malewoon); B., p. 45 (Junk Seylon); C. ii, p. 80 (South Tenasserim); J., p. 146 (Terntau); Salvad., Ann. Mus. Civ. Gen. (2) vii, 1889, p. 433 (Malewoon); Williamson, Journ. Nat. Hist. Soc. Siam ii, 1917, p. 332 (Bangkok; Peninsular Siam).

7 ♂, ♀. Tasan, Chumporn, Peninsular Siam, 15-28 March 1919 (Nos. 4609, 2423, 4675, 4833-4, 4787-9).

"Iris dark; bill and feet vermilion".

Total length ♂, 130, 128, 121, 133, 138; wing ♂, 55, 53, 57, 65, 57; tail ♂, 27, 28, 28, 28, 27; tarsus ♂, 8, 9, 8, 8, 8; bill from gape ♂, 38, 38, 36, 39.5, 38 mm.

All this series are fairly uniform and all are quite adult, as is shown by the uniform blue mantle: in one the frontal blue spot is entirely absent and in another it is somewhat reduced.

192. *Ceyx rufidorsus rufidorsus* (Strickl.).

Ceyx rufidorsa, Strickland, P. Z. S. 1846, p. 99 (Malacca); B., p. 45 (Junk Seylon).

Ceyx euerythra, Sharpe, Cat. Birds Brit. Mus. xvii, 1892, p. 179 (Klang, Selangor); F., p. 34 (Trang); H. p. 92 (Bandon).

Ceyx rufidorsa rufidorsa, Hartert, Nov. Zool. ix, 1902, p. 430.

The specimens referred to above from Bandon represent the northernmost extension of this species.

We have for the present followed Dr. Hartert in using Strickland's name for this bird and not that of Sharpe. We fail to see, however, even if Strickland's type is not an immature *Ceyx tridactylus*, why it should not be regarded as a young specimen of *Ceyx dilwynni*.

193. *Carcineutes pulchellus* (Horsf.).

Dacelo pulchella, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 175 (Java).

Carcineutes pulchellus, A., pp. 79, 499 (Tavoy to Malewoon); C. ii, p. 86; (Tenasserim); Müller, Journ. für Orn. 1882, p. 399; B., p. 47; (Junk Seylon); E., p. 111 (Patani); F., p. 34 (Trang); H., p. 92 (Bandon); G., p. 150 (Rajburi and Petchaburi).

Carcineutes amabilis, Hume, Stray Feath. i, 1873, p. 474 (Pegu Hills).

Carcineutes pulchellus amabilis, M., p. 434 (Tung Song).

A. Hume & Davison, Stray Feathers, vi, 1873.

B. Müller, Die Ornithologie der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♂. Tapli, Pakchan Estuary, Peninsular Siam, 7 March 1919 (No. 4470).

"Iris yellowish brown; bill and eyelid vermillion; feet yellowish brown".

Total length, 211; wing, 84; tail, 72; tarsus, 16; bill from gape, 45 mm.

The Banded Kingfisher is sparingly distributed in dry jungle throughout Peninsular Siam, but, like other jungle Kingfishers, seems rarer than it is further south. It extends northwards to a latitude of about 19°. The present specimen has the nuchal rufous collar well developed, but like other birds from dry districts, has the under-surface paler, especially on the flanks, than south Malayan and Javanese birds. We are not at present disposed to regard S. W. and Peninsular Siam birds as even subspecifically distinct from the typical race, whatever may be the status of the Burmese, N. and E. Siam, and Annamese birds, of which we have not sufficient female specimens.

The more northern specimens, broadly speaking, show signs of losing the chestnut cervical collar, and the females have the flanks less barred; but these characters also appear in typical Javan specimens.

194. *Halcyon coromanda coromanda* (Lath.).

Alcedo coromanda, Lath., Ind. Orn. i. 1790, p. 252, (Coromandel Coast, ex. Sonnerat : errore! Rangoon, Oberholser).

Halcyon coromandus, E., p. 110 (Patani); F., p. 34 (Trang); A., p. 75 (Tavoy, Malewoon); C. ii, p. 81.

Halcyon coromanda coromanda, Hartert, Vog. Palaarkt. Faun. ii, 1912, p. 896; J., p. 147 (Terutau).

Entomophora coromanda coromanda, Oberholser, Proc. U. S. Nat. Mus. 48, 1915, p. 643-5 (type locality designated as Rangoon).

Callialcyon coromanda, Müller, Journ. für Orn. 1882, p. 398; B., p. 46 (Junk Seylon).

♂ ad. Tung Pran, Takuatung, W. Peninsular Siam, 14 February 1919 (No. 4004).

"Iris dark; bill coral; feet paler coral."

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

Total length, 255; wing, 108; tail, 70; tarsus, 17; bill from gape, 68 mm.

We have elsewhere dealt with this Kingfisher¹ and have shown that the N. E. Sumatran form is quite inseparable from that inhabiting the continent of Asia, except in the extreme south of the Peninsula, where *H. c. minor* occurs. The present species is widely though sparingly distributed along both coasts of Peninsular Siam, especially affecting casuarina groves. It is very numerous both in Singgora and at Tanjong Patani.

195. *Halcyon smyrnensis fusca* (Bodd.).

Alcedo fusca, Bodd., Tab. Pl. Enl., 1783, p. 54 (Malabar).

Halcyon smyrnensis, A., p. 74 (Tavoy to Pakchan); D., p. 69 (Patani); E., p. 110 (Patani); F., p. 34 (Peninsular Siam); H., pp. 92, 145 (Bandon; Koh Samui; Koh Pennan).

Halcyon smyrnensis fusca, I., p. 116 (Koh Lak); K., p. 92 (Tachin); L., p. 96 (Ghirbi); Williamson, Journ. N. H. S. Siam, ii, 1917, p. 334 (Bangkok; S. W.; and Peninsular Siam),

♀. Namchuk, Pakchan Estuary, Peninsular Siam, 26 February 1919 (No 4257).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 8 March 1919 (No. 4495).

♀. Koh Lak, Rajburi, S. W. Siam, 4 April 1918 (No. 5058).

"Iris dark or dark brown; bill dark blood red, darker on tomtia; feet reddish, dark red, or coral".

Total length ♂, 257; ♀, 283, 272; wing ♂, 120; ♀, 119, 116; tail ♂, 88; ♀, 88, 80; tarsus ♂, 16; ♀, 18, 17; bill from gape ♂, 65; ♀, 67, 62 mm.

There is much variation in the chestnut tint of the head and under surface, which is apparently due to age. Old specimens have a greenish gloss over the white of the breast, very perceptible in certain lights.

The species is widely distributed over the whole of Peninsular Siam near the sea and in open country, but is not met with in heavy jungle or at any great elevation.

1 Kloss, Journ. Fed. Malay States Mus. x, 1921, pp. 215-217.

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. Insel Salanga, 1882.
C. Oates, Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

196. *Halcyon pileata* (Bodd.).

Alcedo pileata, Bodd., Tabl. Pl. Enl, 1783, p. 41 (China).

Halcyon pileata, A., pp. 74, 499 (Tavoy to Bankason); E., p. 110 (Patani); F., p. 34 (Peninsular Siam); J., p. 148 (Langkawi and Terutau); L., p. 95 (Junk Seylon); Williamson, Journ. N. H. S. Siam ii, 1917, p. 335 (S. W. and Peninsular Siam).

Entomobia pileata, B., p. 46 (Junk Seylon).

♀. Pangnga, Peninsular Siam, 2 February 1919 (No. 3954).

♀. Tung Pran, Takuatung, Peninsular Siam, 14 February 1919 (No. 4010).

♀. Koh Rah, Takopah, Peninsular Siam, 15 February 1919 (No. 4028).

"Iris dark; bill blood red; feet dark red, scales edged with black."

Total length, 291, 305, 305; wing, 128, 130, 135; tail, 88, 93, 98; tarsus, 17, 17, 17; bill from gape, 68, 71, 77 mm.

Throughout its immense range, from Korea to Celebes, and from the Bombay Presidency to China, this species seems extraordinarily stable in its characters and is not divisible into local races.

It is very common in southern Peninsular Siam (though we did not actually collect specimens in Bandon) and rather less so as one travels northward.

197. *Halcyon chloris armstrongi* Sharpe.

Halcyon armstrongi, Sharpe, Cat. Birds Brit Mus. xvii, 1892, p. 277, pl. vii, fig. 1 (Siam).

Halcyon chloris, A., p. 78 (Tenasserim; Mergui); K., p. 92 (Tachin).

Halcyon chloris armstrongi, I., p. 117 (Koh Lak).

Sauropatis chloris chloris, M., p. 435 (Meklong, nr. Bangkok).

Sauropatis chloris, Salvad. Ann. Mus. Civ. Gen. (2) VII, 1889, p. 433 (Malewoon).

♂. Koh Lak, S. W. Siam, 2 April 1919 (No. 4947).

"Iris dark; maxilla black, mandible pinkish white, tip black; feet greenish."

Total length, 240; wing, 101; tail, 72; tarsus, 17; bill from gape, 57 mm.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (second part).

Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part.).

198. *Halcyon chloris humii* Sharpe.

Halcyon humii, Sharpe, Cat. Birds Brit. Mus. xvii, 1892, p. 281, pl. viii (Selangor).

Sauropatis chloris, B., p. 46 (Junk Seylon).

Halcyon humii, D., p. 69 (Patani); E., p. 110 (Patani).

Halcyon armstrongi, F., p. 34 (Langkawi and Terutau); H., p. 145 (Koh Samui and K. Pennan).

Halcyon chloris, J., p. 149 (Langkawi and Pulau Lontar); L., p. 96 (Pulau Panjang).

One of us has recently examined a large series of the Blue-and-white Kingfisher from the present area and is now of opinion that two races may fairly be recognised (Journ. F. M. S. Mus., x, 1921, p. 214), for though individuals do not always bear out this conclusion, yet in series the differences are quite tangible.

The northern form, *H. c. armstrongi*, has the ear-coverts of the same blue as the crown, though sometimes darker, the black nuchal band obsolete or absent, and only a slight buffy wash on the flanks. The southern race, *H. c. humii*, has ear-coverts more blackish, or of a darker different blue from the crown, the nuchal band pronounced, and the flanks more strongly washed with buff. The place where the forms intergrade seems to be in the neighbourhood of the Isthmus of Kra, and we have referred specimens accordingly.

199. *Halcyon concreta* (Temm.).

Dacelo concreta, Temm. Pl. Col. pl. 346, 1825 (S. W. Sumatra); Schleg. Mus. Pays Bas, Alced., 1863, p. 26.

Halcyon varia, Eyton, P. Z. S. 1839, p. 101 (Malacca, ♀).

Halcyon concreta, A., p. 76 (Bankasoon and Malewoon); C. ii, p. 84; F., p. 35 (Trang).

As far as Peninsular Siam is concerned, only recorded from Trang. In southern Tenasserim confined to the vicinity of the Pakchan Estuary where, however, we did not meet with it.

Most Bornean specimens have the blue of the upper surface darker, as also the blue malar stripe, which is blacker posteriorly; but the differences are not very definite and can be matched by one or two Malayan specimens. In females and younger males, both of Malayan and Bornean birds, the malar stripe is much brighter blue.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Inselalanga, 1882.

C. Oates, Birds Brit. Borneo, Vols. i. & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

BUCEROTIDÆ.

HORNED BILLS.

1	{ Central tail feathers much elongated	2
	{ Central tail feathers not elongated	3
2	{ Casque small, compressed, crest very full	<i>Berenicornis comatus.</i>
	{ Casque large, truncated in front, crest not full	<i>Rhinoplax vigil.</i>
3	{ Casque large and high	4
	{ Casque small and low	6
4	{ Casque broad, ending in a double point	<i>Dichoceros bicornis.</i>
	{ Casque compressed, ending in a single point	5
5	{ Outer tail feathers entirely white	<i>Anthracoceros coronatus converus</i>
	{ Outer tail feathers only tipped with white	<i>A. albirostris.</i>
6	{ Casque compressed, smaller	7
	{ Casque broad, composed of transverse ridges, larger	8
7	{ Chin and throat naked	<i>Anorrhinus galeritus</i>
	{ Chin and throat feathered	<i>Ptilolæmus t. tickelli.</i>
8	{ Bases of mandibles plicated	<i>Rhytidoceros undulatus.</i>
	{ Bases of mandibles not plicated	<i>R. subruficollis.</i>

200. *Dichoceros bicornis* (Linn.).

Buceros bicornis, Linn., Syst. Nat. i, 1766, p. 153 (Sunda Straits).

Dichoceros cavatus, A., p. 98 (Pakchan; Bankasoon; Malewoon).

Dicoceros bicornis, B., p. 50 (Junk Seylon); D., p. 70 (Patani); E., p. 108 (Patani); F., p. 35 (Terutan Id.); G., p. 150 (Rat-buri and Petchaburi); J., p. 150 (Telibun Id.); L., p. 96 (Ghirbi).

♂. Tung Pran, Takuatung, Peninsular Siam, 13 February 1919 (No. 3983).

♂, ♀. Tapli, Pakchan, Peninsular Siam, 2 March 1919 (No. 4358, 4360).

"Iris red; bill ivory, stained with yellow, more orange at the tip, extremities of casque black, base of lower mandible black; female with no black on casque; feet greenish black".

Total length ♂, 1100, 1155; ♀, 1030; wing ♂, 425, 470; ♀, 465; tail, ♂ 420, 400; ♀, 330; tarsus ♂, 72, 60; ♀, 58; bill from gape ♀, 247, 212; ♀, 207 mm.

Common everywhere along the coast, especially on certain of the islands.

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part). Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

201. *Anthracoceros albirostris* (Shaw & Nodder).

Buceros albirostris, Shaw & Nodder, Nat. Misc. xix, 1807, p. 809 (Chandernagore, Bengal).

Hydrocissa albirostris, A., p. 100 (Tavoy to Bankasoon); B., p. 47 (Junk Seylon).

Anthracoceros malabaricus, D., p. 70 (Patelung); E., p. 107 (Patani); F., p. 35 (Trang; Langkawi; Terutau);

Anthracoceros albirostris, G., p. 150 (Rathuri and Petchaburi); J., p. 150 (Langkawi); L., p. 96 (Ghirbi).

♂. Tung Pran, Takuatung, Peninsular Siam, 12 February 1919 (No. 3962).

♂, ♀. Hat Sanuk, near Koh Lak, S. W. Siam, 13-15 April 1919 (No. 5276, 5318).

"Iris red, orbits silvery tinged with blue; bill ivory and black; feet greenish grey or black."

Total length ♂, 747; ♀, 720; wing ♂, 285; ♀, 280; tail ♂, 285; ♀, 283; tarsus ♂, 44; ♀, 42; bill ♂, 139; ♀, 137 mm.

Specimens from the islands off Takuatung, and from Terutau and Langkawi as well as from Junk Seylon, are all small with the wing less than 265 mm., but judging from the casque are mostly juvenile. An adult male from Chong, Trang, is large, with the wing 308 mm., completely agreeing in this respect with *A. affinis* (Blyth) from the Himalayas. The birds do not appear to differ except in size: but Trang is so far from the range of *affinis* (Dehra Dun to Eastern Assam) that we hardly care to identify by that name an isolated specimen found at the farther extremity of the range of *albirostris*: nor, for the moment, do we use trinomials though we have little doubt that *affinis* is merely a subspecies of *albirostris*.

There is some doubt as to the application of the earlier name *Buceros malabaricus* Gmelin, so we do not use it here.

202. *Anthracoceros coronatus convexus* (Temm.).

Buceros convexus, Temminck, Pl. Col. 1831, pl. 530, (Java).

Anthracoceros convexus, D., p. 70 (Patani).

The southern form of the genus, reaching its northern limit in Patani.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

203. *Rhytidoceros undulatus* (Shaw).

Buceros undulatus, Shaw, Gen. Zool. viii, 1811, p. 26 (Java).

Rhytidoceros undulatus, A., p. 111 (Choungthanoung to Victoria Point); B., p. 48 (Junk Seylon); E., p. 36 (Terutau and Langkawi Ids.); J., p. 150 (Lontar Id.); L., p. 96 (Junk Seylon).

♂. Tapli, Pakchan, Peninsular Siam, 2 March 1919 (No. 4359).

♂. Tasan, Chumporn, Peninsular Siam, 19 March 1919 (No. 4692).

"Iris orange or red, orbit salmon or chrome; throat chrome with transverse band of blue or dark green; bill ivory, reddish at base; feet black."

Total length, ♂, 980, 1055; wing, 465, 502; tail, 350, 410; tarsus, 55, 62; bill from gape, 220, 210 mm.

204. *Rhytidoceros subruficollis* (Blyth).

Buceros subruficollis, Blyth, Journ. Asiat. Soc. Bengal, xii, 1843, p. 177 (vicinity of Moulmein, op. cit. x. 1841, p. 917).

Rhytidoceros subruficollis, A., p. 112 (Bankasoon); G., p. 150 (Ratburi and Petchaburi).

A low country form in the Malay Peninsula, *R. undulatus* keeping more to the hills.

205. *Anorrhinus galeritus* (Temm.).

Buceros galeritus, Temminck, Pl. Col., 1824, pl. 520 (Sumatra).

Anorrhinus galeritus, A., pp. 109, 500 (Nwalabo, Bankasoon); M., p. 435 (Tung Song, Peninsular Siam).

A hill country hornbill. We have a male from Khao Ram, 1200 ft., Nakon Sri Tamarat, March 1922.

***Ptilolæmus tickelli tickelli* (Blyth).**

Buceros tickelli, Blyth, Journ. Asiat. Soc. Bengal, xxiv, 1855, p. 266 (Hills east of Moulmein).

Ptilolæmus tickelli, G., p. 150 (Sai Yoke, Ratburi, W. Siam, vide Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 26).

Will possibly occur just within our limits.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

206. *Berenicornis comatus* (Raffles).

Buceros comatus, Raffles, Trans. Linn. Soc. xiii, 1822, p. 399 (Sumatra).

Berenicornis comatus, A., pp. 106, 500 (Nwalabo and Bankasoon).

Rare everywhere, feeding on very high trees.

Male from Khao Ram, 1200 ft., and two from Khao Luang, 2000 ft., Nakon Sri Tamarat, all in March 1922—the two last being obtained by Mr. W. J. F. Williamson's collector.

207. *Rhinoplax vigil* (Forst.).

Buceros vigil, Forst., Ind. Zool., 1781, p. 40. (Tenasserim).

Rhinoplax vigil, A., p. 115 (Bankasoon).

Fairly common in heavy jungle in the Malay States, but never very easy to obtain.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

UPUPIDÆ.

HOOPES.

Crest with a subterminal bar of white: larger

.. *Upupa epops saturata*.

Crest with no subterminal bar of white: smaller

Upupa epops longirostris.

208 *Upupa epops saturata* Lonnberg.

Upupa epops saturata, Lonnberg, Arkiv. för Zool. v, 1909, No. 9, p. 29 (Kjachta); I., p. 111 (Koh Kak); K., p. 93 (Perak).

This form is insufficiently known, but the local occurrence rests on two birds, one from Perak, the other from Koh Lak, both shot in winter and possibly migrants.

209. *Upupa epops longirostris* (Jerd.).

Upupa longirostris, Jerdon, Birds India, i, 1862 p. 393 (Burma).

Upupa longirostris, A., p. 202 (Pakchan); B., p. 43 (Junk Seylon); O. ii p. 63 (Penasserin; Junk Seylon).

Upupa indica, E., p. 108 (Patani); F., p. 34 (Trang); G., p. 150 (Ratburi and Petchaburi); H., p. 145 (Koh Samui.)

Upupa epops longirostris, I., p. 111 (Koh Lak); K., p. 62 (Koh Lak; Patani); L., p. 95 (Pulau Panjang); Williamson, Journ. N. H. S. Siam, ii, 1917, p. 339 (Bangkok; S. W. and Peninsular Siam).

♂, ♀. Mamok, Pakchan, Peninsular Siam, 27-28 February 1919 (Nos. 4300, 4305.)

2 ♂, 2 ♀. Namchuk, Pakchan, Peninsular Siam, 25-26 February 1919 (Nos. 4215, 4216, 4246, 4262).

♂. Tapli, Pakchan, Peninsular Siam, 8 March 1919 (No. 4508).

2 ♂. Koh Lak, S. W. Siam, 1-9 April 1919 Nos. 4878, 5209).

♂. Kandhuli, Chaiya, Peninsular Siam, 21 September 1919, E. Seimund (C.).

"Iris dark; bill black, corneous at base; feet grey."

Total length ♂, 317, 315, 280, 308, 290; ♀, 283, 300, 288; wing ♂, 145, 137, 145, 147, 142 (dry), 132 (yg.); ♀, 131, 133 130; tail ♂, 113, 108, imp. 106, 103; ♀, 98, 105, 98; tarsus ♂, 24, 24, 23, 23, 23; ♀, 20, 23, 21; bill from gape ♂, 70, 68, 70, 72, 50 (dry); ♀, 54, 55, 51 mm.

Males, as shown by this series, are larger than females, with considerably longer bills, which however seem to be much affected by wear.

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|----|---|-------|---|
| I. | Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. | M. | Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| J. | Robinson, Journ. F. M. S. Mus. vii, 1917. | | (first part). |
| K. | Kloss, Ibis, 1918. | | Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| L. | Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | | (second part). |
| | | M. I. | Baker, Journ. N. H. Soc. Siam, iv, 1920. |
| | | | (third part). |

MEROPIDÆ.

BEE-EATERS.

1	{ Central tail feathers elongated	2
	{ Tail square, central tail feathers not elongated	4
2	{ Head chestnut	<i>Merops viridis.</i>
	{ Head not chestnut	3
3	{ Wing 4 inches or under	<i>M. orientalis birmanus.</i>
	{ Wing 5 inches or over	<i>M. superciliosus javanicus.</i>
4	{ Larger, breast plumes elongate	5
	{ Smaller, breast plumes normal	<i>Melittophagus e. erythrocephalus.</i>
5	{ Breast plumes blue	<i>Nyctiornis athertoni.</i>
	{ Breast plumes vermilion	<i>N. amictus.</i>

210. *Merops viridis* Linn.

Merops viridis, Linn., Syst. Nat. i, 1766, p. 182 (Java); J., p. 151 (Langkawi);

Merops sumatranus, D., p. 69 (Patani); E., p. 109 (Patani); F., p. 37 (Peninsular Siam and Langkawi); H., p. 92, 142 (Pandon, Koh Samui and Koh Pennan).

2 ♂, ♀. Koh Lak, S. W. Siam, 2-4 April 1919 (Nos. 4943, 5010, 5019).

"Iris carmine; bill black; feet brownish black."

Total length ♂, 286, 302; ♀, 258; wing ♂, 110, 112; ♀, 108; tail (middle feathers) ♂, 165, 142; ♀, 130; tail (outer feathers) ♂, —, —; ♀, 80; tarsus ♂, 12, 11; ♀, 11; bill from gape ♂, 45, 44; ♀, 44 mm.

Mr. W. J. F. Williamson has examples from Chumporn and Bangtaphan.

It is curious that this bird should, so far as is known to date, not occur in Tenasserim, while it is found on the other side of the range at the above locality and also in Eastern Siam and French Indo-China. The species is, at all events, partially migratory, but less so than *M. javanicus*, though in the more southern parts of its range it may be met with throughout the year.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1862.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1906.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

211. *Merops orientalis birmanus* Neumann.

Merops viridis (nec Linn.), A., p. 67 (Tavoy and Mergui).

Merops viridis burmanus, Neumann, Ornith. Monatsb. xviii, 1910, p. 80 (Myingan, Irawadi).

Merops orientalis burmanus, Hartert, Vog. Palaarkt. Faun. ii, 1912, p. 864; I., p. 110 (Koh Lak).

Merops lamark burmanus, K., p. 93 (Koh Lak).

3 ♂, 4 ♀. Koh Lak, S. W. Siam, 2-8 April 1919 (Nos. 4941, 4942, 5954-5, 5060, 5072, 5179).

"Iris carmine; bill black; feet greyish brown or brownish."

Total length ♂, 187, 191, 138; ♀, 220, 222, 232, 213; wing ♂, 96, 97, 93; ♀, 91, 88, 92, 91; tail ♂, 77, 77, 128; ♀, 112, 112, 124, 103; tarsus ♂, 11.5, 11, 9.5; ♀, 11, 9, 9.5, 10; bill from page ♂, 33 (app.), 35, 35; ♀, 29, 30, 30 (app.), 32 mm.

These specimens are all in rather worn plumage, but in all the top of the head is more or less rich rufescent brown washed with green, thus conforming to Neumann's diagnosis. In several the bill is damaged or worn at the tip, which is probably due to the use of the bill for excavating nesting holes.

The species was very abundant at Koh Lak, in open country in the vicinity of the sea; we did not see it further south, and it certainly does not occur at Chumporn where we were specially on the look out for it. It has been taken by Williamson's collectors at Petchaburi and also at Nong Khae, in S. W. Siam.

212. *Merops superciliosus javanicus* Horsf.

Merops javanicus, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 171 (Java).

Merops philippinus, A., p. 67, 498 (Bankasoon); B., p. 44 (Junk Seylon); E., p. 109 (Trang; Terutau Id.); G., p. 150 (Rathburi and Petchaburi); H., p. 146 (Koh Samui and Koh Penman); J., p. 152 (Terutau Id.); K., p. 94 (Koh Lak); Williamson, Journ. Nat. Hist. Soc. Siam ii, 1917, p. 328 (Bangkok; Peninsular Siam).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 6 March 1919 (No. 4447).

♂. Tasan, Pakchan Estuary, Peninsular Siam, 15 March 1919 (No. 4614).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

"Iris red; bill black; feet black or purplish black."

Total length, —, 302; wing, 136, 133; tail, —, 154; tarsus, 13, 11; bill from gape, 58, 42 mm.

Apparently nowhere very common in the more northern parts of the Peninsula.

213. *Melittophagus erythrocephalus erythrocephalus* (Gm.).

Merops erythrocephalus, Gmelin, Syst. Nat. i, 1788, p. 463 (Ceylon).

Merops leschenaulti, A., p. 68 (Tavoy to Banksasoon).

Melittias quinticolor, B., p. 44 (Junk Seylon).

Melittophagus swinhoei, E., p. 109 (Patani); F., p. 36 (Trang and Langkawi); H., p. 92 (Bandon); J., p. 152 (Terutau Id.); L., p. 96 (Ghirbi; Junk Seylon; Pulau Panjang).

We did not collect this Bee-eater on the present expedition, though, curiously enough, Davison notes that he came across immense numbers up the head waters of the Pakchan. In the southern parts of Peninsular Siam, and on Langkawi and Terutau Islands, it is very abundant during the winter months. It is found, though sparingly, in Penang and extends south as far as Parit on the Perak river, where large flocks were met with in September 1911.

214. *Nyctiornis athertoni* Jard. & Selby.

Nyctiornis athertoni, Jard. & Selby, Ill. Orn. ii, 1828, pl. 58 (Cachar); L., p. 111 (Koh Lak).

♀. Hat Sanuk, nr. Koh Lak, S. W. Siam, 15 April 1919 (No. 5266).

"Iris bronze; bill black, whitish at base; feet sage green."

Total length 345; wing 138; tail 135; tarsus 20; bill from gape 51 mm.

The above locality, in the neighbourhood of which Gyldenstolpe also secured two specimens, is considerably the most southerly recorded from Siam, though the species reaches a similar latitude in French Indo-China. The more bluish tint of the crown, noted on birds from north Siam by Gyldenstolpe, is probably the result of wear: it is very marked on the whole upper surface of our bird, which is in very worn plumage.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Inselalanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

215. *Nyctiornis amictus* (Temm.).

Merops amictus, Temm. Pl. Col. iv, 1824. pl. 310 (Bencoolen, Sumatra).

Nyctiornis malaccensis, Cab. and Heine, Mus. Hein. ii, 1860, p. 133 (Malacca: female).

Nyctiornis amicta, A., p. 69, 498 (Malewoon); F., p. 37 (Trang); G., p. 150 (Ratburi and Petchaburi); H., p. 92 (Bandon); L., p. 97 (Ghirbi).

♂. Renong river, Peninsular Siam, 22 February 1919 (No. 4160).

♀. Mamok, Pakchan Estuary, Peninsular Siam, 28 February 1919 (No. 4313).

♂, ♀. Tasan, Chumporn, Peninsular Siam, 14-22 March 1919 (No. 4582, 4771).

"Iris orange; bill black, whitish at base; feet pale green grey."

Total length ♂, 333, 323; ♀, 320, 308; wing ♂, 133, 124; ♀, 121, 123; tail ♂, 130, 117; ♀, 123, 120; tarsus ♂, 15, 15; ♀, 16, 16; bill from gape ♂, 60, 57; ♀, 49.5, 55 mm.

Examination of these and many others from various parts of the Malay Peninsula, Sumatra and Borneo shows that all but the adult males have some small trace of scarlet on the feathers of the forehead, which appears to be lost by a direct change to mauve or lilac, as many feathers are mauve at the tips with scarlet near the shaft.

Mr. Gairdner's record seems the most northerly for Siam; but on the Burmese frontier it has been obtained at Myawadee, 65 miles N. by E. of Moulmein. In the southern parts of Peninsular Siam it is a very common forest bird.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).
M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
(third part.).

CAPRIMULGIDÆ.

GOATSUCKERS OR NIGHT-JARS.

1	{ Gape with bristles	..	..	..	2
	{ Gape with no bristles	..	..	<i>Lyncornis c. cervineiceps</i>	
2	{ Four outer pairs of tail feathers with white tips	..	..	..	3
	{ Two outer pairs of tail feathers with white tips	..	..	..	4
3	{ Wing more than 8 inches	..	..	<i>Caprimulgus indicus jotaka</i>	
	{ Wing less than 8 inches	..	..	<i>C. indicus innominatus</i>	
4	{ Wing 6 inches or under	..	..	<i>C. asiaticus</i>	
	{ Wing 7 inches or over	..	..	<i>C. macrurus ambiguus</i>	

216. *Lyncornis cervineiceps cervineiceps* Gould.

Lyncornis cervineiceps, Gould, Icon. Av. pt 11, 1838, pl. 14 (China or adjacent Islands! type locality here fixed as province of Trang, Peninsular Siam); A., p. 60 (Pabyin; Bankasoon; Tongka); F., p. 38 (Trang); G., p. 150 (Ratburi and Petchaburi); L., p. 107 (Hat Sanuk); L., p. 97 (Junk Seylon); Hume, Stray Feathers, ix, 1880, p. 120. (Kasoon; Pangnga).

♂. Kandhuli, Chaiya, Peninsular Siam, 14 September 1919, E. Seimund (C).

♀. Tung Pran, Takuatung, Peninsular Siam, 13 February 1919 (No. 3968).

"Iris dark; bill pinkish horn, culmen black; feet brownish horn."

Total length ♀, 405; wing ♂, 305; ♀, 323; tail ♀, 230; tarsus ♀, 18; bill from gape ♀, 29.5 mm.

Fairly common all over Peninsular Siam, except the Monthon of Patani.

217. *Caprimulgus indicus innominatus* Hume (?).

Caprimulgus innominata, Hume, Stray Feathers, iii, 1875, p. 318, note (Choungthanoung, Tenasserim).

Caprimulgus jotaka, A., p. 56 (Choungthanoung, Bankasoon?).

Caprimulgus indicus jotaka, J., p. 153 (Terutau Id.).

Specimens from Terutau Island, Annam and Hainan tend to show that Indo-China possesses a small dark resident race of this goatsucker (analogous to *C. i. kelaarti*, of Ceylon and South India), which is best recorded under Hume's name as above.

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornithologie der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

218. *Caprimulgus indicus jotaka* Temm. & Schleg.

Caprimulgus jotaka, Temm. & Schleg., Fauna Japon., Aves, 1847, p. 37, pl. 12 (Japan); F., p. 37 (Trang).

Caprimulgus indicus jotaka, J., p. 153 (Langkawi).

On the coasts and islands of the western side of Peninsular Siam this migratory species is not uncommon during the winter months.

219. *Caprimulgus asiaticus* Latham.

Caprimulgus asiaticus, Latham, Ind. Orn. ii, 1790, p. 588 (India, Bombay); G., p. 150 (Ratburi and Petchaburi); L., p. 109 (Koh Lak); K., p. 97 (Koh Lak).

Not known south of Koh Lak.

220. *Caprimulgus macrurus ambiguus* Hartert.

Caprimulgus macrurus ambiguus, Hartert, Ibis, 1896, p. 373 (Malay Peninsula; Burma; Assam; Eastern Himalayas); K., p. 94 (Koh Lak: Type locality restricted to South Tenasserim); L., p. 97 (Junk Seylon).

Caprimulgus macrurus, A., p. 58, 498 (Tavoy to Malewoon); B., p. 51 (Junk Seylon and Malay Peninsula); E., p. 107 (Patani).

Caprimulgus ambiguus, F., p. 37 (Trang).

Caprimulgus macrurus bimaculatus, L., p. 109 (Hue Sai and Hat Sanuk); J., p. 153 (Langkawi); M., p. 436 (Klong Wong Hip, Peninsular Siam).

♀. Koh Rah, Takuapah, Peninsular Siam, 16 February 1919 (No. 4075).

♂, ♀. Tapli, Pakehan, Peninsular Siam, 2-3 March 1919 (Nos. 4354, 4398).

"Iris dark; bill blackish; feet pinkish brown."

Total length ♂, 287; ♀, 273, 277; wing ♂, 198; ♀, 193, 189; tail ♂, 153; ♀, 135, 145; tarsus ♂, 18; ♀, 14, 16.5; bill from gape ♂, 34; ♀, 31, 34 mm.

Much has been written on the races of this widespread goat-sucker, which it is unnecessary to repeat here. It appears to be fairly well established that three races exist on the Asiatic continent, viz.,

C. macrurus albonotatus, Tickell, Journ. Asiat. Soc. Bengal,

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

ii, 1833, p. 580 (Bengal). A larger and paler form, not found in the area dealt with here.

C. macrurus ambiguus, Hartert, Ibis, 1896, p. 373. An intermediate race ranging south to about 6° or 7° N. Lat.

C. macrurus bimaculatus, Peale, U. S. Explor. Exped. viii, 1848, p. 170 (Singapore.) A smaller darker race found in the southern third of the Malay Peninsula.

Note. *Caprimulgus m. anamensis* Oberholser (Proc. U. S. Nat. Mus. xlviii, 1915, p. 593, Tanjong Katong, Singapore) is a pure synonym of the last.

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| A. Hume & Davison, Stray Feathers, vi, 1878. | E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905. |
| B. Müller, Die Ornith. der Insel Salanga, 1882. | F. Robinson and Kloss, Ibis, 1910-11. |
| C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883. | G. Gairdner, Journ. N. H. Soc. Siam, i, 1915. |
| D. Bonhote, P. Z. S. 1901, Vol. i. | H. Robinson, Journ. F. M. S. Museums, v, 1915. |

APIDÆ.

SWIFTS.

1	{ Shafts of tail feathers stiff, ending in bare points	4
	{ Shafts of tail feathers normal	2
2	{ Tail very deeply forked ; crested or with ornamental plumes on the head ; sexes somewhat different	5
	{ Tail even, or at any rate not deeply forked ; not crested or with ornamental plumes on the head ; sexes similar	3
	{ All four toes directed forwards	6
3	{ Two toes directed forwards, two backwards	<i>Tachornis b. infumatus</i>
	{ Three toes directed forwards, one backwards	7
4	{ Wing over 7 inches	<i>Chaetura gigantea indica</i>
	{ Wing under 5 inches	<i>C. leucopygialis</i>
5	{ Eyebrow and moustachial plumes white	<i>Hemiprocne c. comata</i>
	{ Eyebrow and moustachial plumes not white	<i>H. longipennis harterti</i>
6	{ Abdomen with white tips to feathers	<i>Apus p. pacificus</i>
	{ Abdomen uniform blackish	<i>A. affinis subfurcatus</i>
7	{ Upper surface steel blue ; belly with white edgings to feathers	<i>Collocalia linchi elachyptera</i>
	{ Upper surface sooty brown ; belly without white edgings to feathers	8
8	{ Wing 5 inches or more	<i>C. innominata</i>
	{ Wing less than 5 inches	<i>C. francica germaini</i>

***Collocalia linchi elachyptera* Oberh.**

Collocalia linchi elachyptera, Oberholser, Proc. Acad. Nat. Sci.

Philad. 1906, p. 207 (Bentinck Id., Mergui Archipelago).

Collocalia linchi, Blyth, Birds of Burma, p. 35 (Mergui Arch.).

Certain to occur in the neighbourhood of the Pakchan Estuary within Siamese territory, though no specimens are actually on record.

***Collocalia innominata* Hume.**

Collocalia innominata, Hume, Stray Feathers, i, 1873, p. 294 (South Andaman Id.) ; A, p. 49 (Mergui and Bankasoon) ; J., p. 154.

Collocalia maxima (nomen nudum), Hume, Stray Feathers, iv, 1876, p. 223 (Mergui and Bankasoon).

This large Cave-Swiftlet will probably be found abundant on many of the islands on both coasts of Peninsular Siam.

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| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part). |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part). |
| K. Kloss, <i>Ibis</i> , 1918. | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part). |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | |

221. *Collocalia francica germaini* Oust.

Collocalia germaini, Oustalet, Bull. Soc. Philom., 1876, p. 1 (Pulo Condor).

Collocalia spodopygia, A., p. 51 (Mergui to Bankasoon); C. ii, p. 8 (Mergui Arch., south of Tavoy).

Collocalia merguensis, H., p. 146 (Koh Samui and Koh Pennan).

Collocalia francica germaini, I., p. 106 (Koh Lak); J., p. 154 (Lontar Id.).

We found this swiftlet numerous on Koh Samui and Koh Pennan in the Bandon Bight. Specimens from these islands and from Pulau Condor, the typical locality, have been submitted to Dr. Hartert and pronounced to be identical. We have seen a specimen of Williamson's from Langsuan, taken in October 1921.

222. *Chaetura gigantea indica* Hume.

Chaetura indica, Hume, Stray Feathers, i, 1873, p. 471 (Southern India). A., p. 46 (Bankasoon, Malewoon); Hartert, Cat. Birds Brit. Mus. xvi, p. 476 (Salanga or Junk Seylon).

Chaetura gigantea, A., p. 46 (Malewoon; cf. Hartert, Cat. Birds Brit. Mus. xvi, p. 475).

Hirundinapus gigantea, C. ii, p. 5 (Malewoon).

We have not seen specimens of this race from S. W. or Peninsular Siam, but it is an occasional straggler as far south as Selangor. Intermediate forms also occur.

Chaetura leucopygialis (Blyth).

Acanthylis leucopygialis, Blyth, Journ. Asiat. Soc. Bengal, xviii, 1849, p. 809 (Penang).

Chaetura coracina, A., p. 45 (Choungthanoung; Pakehan).

Rapidura leucopygialis, C. ii, p. 6 (S. Tenasserim).

Probably common, but hard to obtain.

223. *Apus pacificus pacificus* (Lath.).

Hirundo pacifica, Latham, Ind. Orn. Suppl., 1801, p. lviii (New South Wales).

Cypselus pacificus, A., p. 48 (Bankasoon); H., p. 146 (Koh Pennan).

♂. Kandhuli, Chaiya, Peninsular Siam, 12 September 1919, E. Seimund (C).

Wing 175 mm.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1903.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

We are unable to say if the darker form described by the late Col. Harington as *C. p. cooki* from the Northern Shan States (Bull. Brit. Orn. Club, xxxi, 1913, p. 57: Goteik, N. Shan States) occurs in Peninsular Siam; the probabilities are that it does, as we have one specimen closely agreeing with the description, shot on the summit of Kedah Peak in December 1915.

224. *Apus affinis subfurcatus* Blyth.

Cypselus subfurcatus, Blyth, Journ. Asiat. Soc. Bengal, xviii, 1849 p. 807 (Penang); A., p. 47 (Malewoon); J., p. 155 (Koh Muk, Trang).

Apus affinis subfurcatus, I., p. 107 (Koh Lak).

The common House-Swift in Peninsular Siam.

225. *Tachornis batassiensis infumatus* (Sch.).

Cypselus infumatus, Schater, P. Z. S. 1865, p. 602 (Borneo); A., p. 48 (Mergui to Malewoon).

Tachornis infumatus, E., p. 107 (Patani); F., p. 38 (Trang); H., p. 146 (Koh Samui); I., p. 107 (Koh Lak); Hartert, Cat. Birds Brit. Mus. xvi, 1892, p. 468 (Kossoom and "Poonya" Pangnga?).

Common among the Lontar Palms (*Borassus flabellifer*)

wherever they occur.

226. *Hemiprocne longipennis harterti* Stres.

Hemiprocne longipennis harterti, Stresemann, Nov. Zool. xx, 1913, p. 339 (Deli, Sumatra).

Dendrochelidon longipennis, A., pp. 52, 498 (Nwalabo to Malewoon).

Macropteryx longipennis, F., p. 38 (Trang).

227. *Hemiprocne comata comata* (Temm.).

Cypselus comata, Temminck, Pl. Col., 1824, pl. 268 (Sumatra).

Dendrochelidon comata, A., p. 51 (Choungthanoung to Malewoon).

Macropteryx comata, F., p. 38 (Trang).

Both these Tree-Swifts are common, especially on the banks of the larger rivers in jungle country.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

TROGONIDAE.

TROGONS.

1	{ Abdomen yellow or orange yellow ..	<i>Pyrotrogon oreskios uniformis</i>	2
	{ Abdomen brown or buffy brown ..	.. .. .	3
	{ Abdomen red or pink ..	.. .. .	3
2	{ Breast and abdomen uniform dark brown	<i>P. orrophæus</i> , ♀	..
	{ Breast brownish grey, abdomen buffy brown	<i>P. kasumba</i> , ♀	..
3	{ Smaller, wing less than 5 inches ..	.. .. .	4
	{ Larger, wing more than 5 inches ..	.. .. .	6
4	{ Head and throat brown, abdomen pink ..	<i>P. duvauceli</i> , ♀	..
	{ Head and throat black, abdomen red ..	.. .. .	5
5	{ Rump scarlet ..	<i>P. duvauceli</i> , ♂	..
	{ Rump light brown ..	<i>P. orrophæus</i> , ♂	..
6	{ Outer tail-feathers partly white speckled with black ..	.. .. .	7
	{ Outer tail-feathers partly uniform white ..	.. .. .	8
7	{ Head and breast black, nape pink ..	<i>P. neglectus sumatranus</i> , ♂	..
	{ Head, breast and nape brown ..	<i>P. n. sumatranus</i> , ♀	..
8	{ Head and breast black, a red nape-band ..	<i>P. kasumba</i> , ♂	..
	{ Head, breast and nape dull red ..	<i>P. e. erythrocephalus</i> , ♂	..
	{ Head, breast and nape brown ..	<i>P. e. erythrocephalus</i> , ♀	..

228. *Pyrotrogon kasumba* Raffles.

Trogon kasumba, Raffles, Trans. Linn. Soc. xiii, 1821, p. 282 (Sumatra).

Two males obtained by Mr. W. J. F. Williamson's collector at Bangnara, Patani, 10–14 July, 1916, constitute the first record for this species in Siam.

Pyrotrogon erythrocephalus erythrocephalus (Gould).

Trogon erythrocephalus, Gould, P. Z. S. 1834, p. 25 (near Rangoon).

Harpactes erythrocephalus, C. ii, p. 99 (Muleyit); E., p. 106 (Perak-Pahang boundary).

Pyrotrogon erythrocephalus, L., p. 105 (North Siam).

This is one of the commonest mountain trogons in the Malay States and will certainly be found eventually in the Siamese portions of the Peninsula. Oates states that it is abundant in Pegu, where it is commonest in the hills, and Gyldenstolpe obtained several examples in North Siam.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

229. *Pyrotrogon diardi sumatranus* (Blasius).

Harpactes diardi sumatranus, Blasius, Mitt. d. Geogr. Ges. u. d. Naturh. Mus. zu L. beck, ii Reihe, Heft x, 1896, p. 95 (Sumatra and Malay Peninsula).

Pyrotrogon diardi, B., p. 61 (Malay Peninsula).

Pyrotrogon diardi neglectus, M., p. 438 (Tung Song, Peninsular Siam)

♀. Khao Luang, Nakorn Sri Tamarat, 2,000 ft., Peninsular Siam, 15 March 1922.

Müller's male from the Malay Peninsula probably came from the vicinity of Junk Seylon: and we obtained in 1909 another from Chong, Trang, Peninsular Siam.

Blasius's name antedates *neglectus* of Forbes and Robinson: but was published so inconspicuously that it was overlooked until attention was drawn to it by Snoukaert van Schauberg (Ibis, 1922, p. 665).

230. *Pyrotrogon oreskios uniformis* Robinson.

Pyrotrogon oreskios uniformis, Robinson, Journ. F. M. S. Mus. vii, 1917, p. 149 (Trang and Kedah, also Langkawi and Terutau Ids.); L., p. 97 (Junk Seylon).

Harpactes oreskios, A., pp. 66, 498 (Tavoy to Victoria Point); G., p. 150 (Ratburi and Petchaburi); O. Grant, Cat. Birds Brit. Mus. xvii, p. 495 (Tavoy to Victoria Point; Meklong, Siam).

Pyrotrogon oreskios, E., p. 106 (Patani); F., p. 39 (Trang and Langkawi Id.); H., p. 92 (Bandon); I., p. 105 (Koh Lak).

Orescius gouldi, B., p. 61 (Junk Seylon).

♂. Renong river, Peninsular Siam, 21 February 1919 (No. 4148).

3 ♂. Tasan, Chumporn, Peninsular Siam, 16-28 March 1919 (Nos. 4619, 4747, 4908).

♂. Khao Luang, Nakorn Sri Tamarat, 3,000 ft., Peninsular Siam, 25 March 1922.

"Iris grey; orbits and base of bill smalt. culmen black; feet pale grey."

Total length ♂, 292, 285, 285; wing 123, 122, 122; tail 167, 172, 173; tarsus 12, 12, 13; bill from gape 24, 22, 25 mm.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

The Southern Malay Peninsula birds differ very slightly in having the bars on the secondaries and wing coverts rather closer together in both sexes than in the northern form. Both differ from the typical Javan bird in having the rump uniform chestnut without any wash of zanthine orange.

The species is generally distributed throughout the area under consideration, where it is, broadly speaking, very much commoner than it is in the more Southern Malay districts.

231. *Pyrotrogon orrophæus* Cab. & Heine.

Pyrotrogon orrophæus, Cab. & Heine, Mus. Hein., Th. iv, 1863, p. 156 (Malacca); B., p. 60 (Malay Peninsula).

The specimen recorded by Müller from the Malay Peninsula probably came from the neighbourhood of Junk Seylon. The most northerly example of *P. orrophæus* obtained by us is one from a few miles north of Taiping in Perak: it is apparently a very rare bird in the Malay States.

232. *Pyrotrogon duvauceli* (Temm.).

Trogon duvauceli, Temminck, Pl. Col., 1824, pl. 291 (Sumatra).

Harpactes duvauceli, A., pp. 63, 498 (Nwalabo to Malewoon); E., p. 106 (Patani); M. p. 437 (Tung Song, Peninsular Siam).

2 ♂. Tazan, Chumporn, Peninsular Siam, 22–28 March 1919 (Nos. 4785, 4914).

“Iris dark; supraorbital region silvery cobalt, infraorbital white; bill smalt, deeper at gape, culmen black; feet purplish.”

Total length 225, —; wing 103, —; tail 133, —; tarsus 10, —; bill from gape 23, — mm.

We can see no tangible differences between Northern Malay, Southern Malay, Sumatran and Bornean birds; but our series from the two latter regions is poor.

A. Hume, & Davison, *Stray Feathers*, vi, 1878.

B. Müller, *Die Ornithologie der Inselalanga*, 1882.

C. Oates, *Birds Brit. Burmah*, Vols. I. & II, 1883.

D. Bonhote, *P. Z. S.* 1901, Vol. I.

E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910–11.

G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.

H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

CUCULIDAE.

CUCKOOS.

1	{ Head crested	<i>Clamator coromandus</i>	
	{ Head not crested .. .. .	.. .. .	2
	{ Tarsus feathered anteriorly; wing pointed and longer than tail .. .. .	.. .. .	3
2	{ Tarsus naked; wing rounded and about equal to tail	<i>Eudynamis s. malayana</i>	
	{ Tarsus naked; wing rounded and shorter than tail .. .. .	.. .. .	18
	{ Secondaries scarcely exceeding half the length of wing .. .. .	.. .. .	4
3	{ Secondaries two thirds the length of wing or more .. .. .	.. .. .	5
	{ No subterminal black band on tail	<i>Cuculus canorus bakeri</i>	
4	{ A subterminal black band on tail	<i>C. m. micropterus</i>	
	{ Tail square or forked; plumage black	<i>Surniculus lugubris diersuoides</i>	
5	{ Tail rounded and graduated; plumage not black .. .. .	.. .. .	6
	{ Larger, wing more than 5.5 inches; tail with 3 or 4 black bars .. .. .	.. .. .	7
6	{ Smaller, wing not more than 5 inches; tail with no bars or with many .. .. .	.. .. .	10
	{ Wing less than 6 inches: a distinct dark malar stripe	<i>Hierococcyx nanus</i>	
7	{ Wing more than 6 inches: no distinct dark cheek stripe .. .. .	.. .. .	8
	{ Abdomen never banded: back in adults blackish grey: wing 6.7 to 7.5 inches	<i>H. fugax niscolor</i>	
8	{ Abdomen transversely banded in adults .. .. .	.. .. .	9
	{ Wing 7 to 8 inches: back in adults ashy grey	<i>H. varius</i>	
9	{ Wing over 8.5 inches: back in adults brown	<i>H. sparrowioides</i>	
	{ Ground colour of throat not white .. .. .	.. .. .	11
10	{ Throat whitish with dark cross-bars .. .. .	.. .. .	12
	{ Fore neck rufous like the abdomen: head like the back, generally bronzed; white on inner webs of tail-feathers confined to the edge	<i>Cacomantis s. sepulchralis</i>	
11	{ Fore neck grey contrasting with abdomen: head grey, paler than the back: white on inner web of tail-feathers extending to, or near, the shafts	<i>C. merulinus querulus</i>	
	{ Upper parts always barred: not metallic	<i>Penthoeceryx somnerati venustus</i>	
12	{ Upper parts unbarred in adults: metallic .. .. .	.. .. .	13
	{ Upper parts entirely or partly deep purple	<i>Chalcococcyx xanthorhynchus</i> , ♂	
13	{ No purple above .. .. .	.. .. .	14
	{ Head rufous .. .. .	.. .. .	15
14	{ Head not rufous .. .. .	.. .. .	16
	{ Back, wings and tail barred rufous and green or greenish bronze: upper mandible dark throughout	<i>C. xanthorhynchus</i> , imm.	
15	{ Back, wings and tail entirely coppery green: upper mandible pale at base	<i>C. maculatus</i> , ♀	
	{ Upper parts deep shining green: upper mandible pale at base	<i>C. maculatus</i> , ♂	
16	{ Upper parts not intense green: upper mandible entirely dark .. .. .	.. .. .	17

- I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).
 J. Robinson, Journ. F. M. S. Mus. vii, 1917. Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).
 K. Kloss, Ibis, 1918. M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).
 L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

17	{	Greenish bronze above; much white on forehead:			
		little chestnut in tail	<i>C. m. malayanus</i> , ♂, ♀		
	{	Coppery green above; little or no white on forehead:			
		much chestnut in tail	<i>C. xanthorhynchus</i> , ♀ ad.		
18	{	Claws of all toes similar .. ..	.. ..	19	
		Claw of hind toe very long and nearly straight .. ..	.. ..	24	
19	{	Bill red throughout; general colour above grey	<i>Zanclostomus javanicus pallidus</i>		
		Bill wholly or partly green .. ..	.. ..	20	
20	{	Culmen almost straight, back ferruginous ..	<i>Rhinortha c. chlorophæa</i>		
		Culmen much curved throughout, back metallic green .. ..	.. ..	21	
21	{	Tail-feathers tipped chestnut	<i>Phoenicophaes c. erythrognaethus</i>		
		Tail-feathers tipped white .. ..	.. ..	22	
22	{	Abdomen chestnut	<i>Rhopodytes sumatranus</i>		
		Abdomen not chestnut .. ..	.. ..	23	
23	{	Wing 6 inches or more, abdomen grey ..	<i>R. tristis longicaudatus</i>		
		Wing about 5 inches, abdomen blackish ..	<i>R. diardi</i>		
24	{	Wing about 5.5 inches, under wing-coverts chestnut	<i>Centropus bengalensis javanicus</i>		
		Wing about 8 inches, under wing-coverts not chestnut	<i>C. sinensis intermedius</i>		

233. *Clamator coromandus* (Linn.).

Cuculus coromandus, Linn., Syst. Nat. i, 1766, p. 171 (Coromandel).

Oocystes coromandus, B., p. 54 (Junk Seylon); F., p. 39 (Trang and Langkawi); J., p. 158 (Langkawi, Terutau and Telibon Ids.).

Not uncommon in the winter months over the whole of the Malay Peninsula.

234. *Surniculus lugubris dicruroides* (Hodgs.).

Pseudornis dicruroides, Hodgson, Journ. Asiat. Soc. Bengal, viii, 1839, p. 136, pl. (Nepal).

Cucangelus lugubris, B., p. 52 (Junk Seylon).

Surniculus lugubris dicruroides, J., p. 156 (Langkawi, Terutau, Telibun and Lontar Ids.; Trang; Perlis); K., p. 97 (Koh Lak); L., p. 97 (Junk Seylon; Ghirbi).

♀. Koh Lak, S. W. Siam, 2 April 1919. [No. 4946].

"Iris dark hazel; bill black; feet purplish grey."

Total length 250; wing 138; tail 134; tarsus 15.5; bill from gape 24.5 mm.

Adult birds from Khao Luang, Nakorn Sri Tamarat, have the wings 144, 138, 140, 126 mm., the last showing an approach to *S. l. brachyurus*.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Borneo, Vols. i & ii, 1883.

D. Bonhote, P. Z. S., 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Practically all the specimens from Siam examined by us have been definitely referable to this northern form: it is probable, however, that lowland specimens from Patani will prove to belong to the smaller southern Malayan race. *S. l. brachyurus* Stresemann (Nov. Zool. xx, 1913, p. 340).

235. *Hierococcyx sparveroides* (Vig.).

Cuculus sparveroides, Vigors, P. Z. S. 1831, p. 173 (Himalayas).

Hierococcyx sparveroides, F., p. 40 (Trang); J., p. 159 (Langkawi and Lontar Ids.); L., p. 98 (Ghirbi and Pulau Panjang).

Presumably a winter visitor only. Not recorded from S. Tenasserim or any part of Siam other than the Peninsula.

236. *Hierococcyx varius* (Vahl).

Cuculus varius, Vahl., Skriv. Nat. Selsk., iv, 1797, p. 61 (India.)

Hierococcyx varius, Christiani in Williamson, Journ. N. H. Soc. Siam, ii, 1916, p. 61 (S. W. Siam).

A female obtained by Mr. C. J. Aagaard at Hua Hin on 14th. April 1914, is the only record for Siam.

237. *Hierococcyx fugax nasicolor* (Hodgs.).

Cuculus nasicolor, Blyth, Journ. Asiat. Soc. Bengal, xii, 1843, p. 943 (Nepal).

Hierococcyx nasicolor, F., p. 40 (Trang); H., p. 93 (Bandon); J., p. 159 (Terutau Id.).

Probably a winter visitor only: it is common as a migratory bird in the Straits of Malacca in October and November.

A nearly adult pair were obtained on Khao Luang, Nakorn Sri Tamarat, in March 1922.

238. *Hierococcyx nanus* Hume.

Hierococcyx nanus, Hume, Stray Feathers, v, 1877, p. 490 (Bankasoon); A., p. 157, 502 (Tavoy to Bankasoon); B., p. 53 (Junk Seylon).

Hierococcyx fugax nanus, M., p. 438 (Maprit, Peninsular Siam).

A rare and possibly resident form: we have a few specimens from various parts of the Malay Peninsula. Stuart Baker in claiming the Maprit bird as a record for Siam has overlooked Müller's

Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl.
56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam,
iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).
M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
(third part).

specimen from Junk Seylon. We do not think it advisable to regard this bird as a subspecies of the widespread *H. fugax*, forms of which also occur in the district.

239. *Cuculus micropterus micropterus* Gould.

Cuculus micropterus, Gould, P. Z. S. 1837, p. 137 (Himalayas): A., p. 156 (near Mergui): D., p. 74 (Patani): E., p. 40 (Trang; Langkawi); J., p. 159 (Langkawi).

Cuculus striatus, B., p. 54 (Junk Seylon).

Fairly common in winter.

240. *Cuculus canorus bakeri* Hartert.

Faun. Pal. Vog. ii, 1912, p. 948 (Shillong).

♂ vix ad. Koh Lak, S. W. Siam, 6 April 1919 (No. 5123).

"Iris brown, orbital ring chrome; bill yellowish, black on culmen, reddish at base; feet pale yellow."

Total length 332; wing 198; tail 172; tarsus 19; bill from gape 28 mm.

It seems most convenient to refer this bird to the Assamese race. It has nothing to do with *C. micropterus*, as the tail is uniform blackish grey with no trace of a subterminal band; upper surface ash grey, paler on head; bands on chest dark brown, narrower than in *C. micropterus*.

241. *Penthoceryx sonnerati venustus* (Jerdon).

Cuculus venustus, Jerdon, Madr. Journ. xiii, 1842, p. 140 (Malacca).

Penthoceryx sonnerati, B., p. 52 (Junk Seylon): E., p. 40 (Trang);

L. p. 98 (Ghirbi).

Penthoceryx sonnerati pravata, Robinson & Kloss, Journ. F. M. S. Mus. viii, pt. 2, 1918, p. 135 (North Malay Peninsula).

Penthoceryx sonnerati venustus, Baker, Bull. Brit. Orn. Club, xxxix, 1919, p. 46 (Central Tenasserim, southwards).

Our specimens possess the characters given for *P. venustus* (Jerdon) by Mr. Baker (*l. c. s.*).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

242. *Cacomantis merulinus querulus* Heine.

Cacomantis querulus, Heine, Journ. f. Orn. 1863, p. 352 (Nepal ; Burma).

Cacomantis threnodes, A., p. 158 (Mergui to Bankasoon) ; B., p. 53 Junk Seylon) ; C. ii, p. 112 (Tenasserim and Malay Peninsula).

Cacomantis merulinus, Shelley, Cat. Birds B. M. xix, 1891, p. 268 (Mergui to Bankasoon) ; E., p. 105 (Patani) ; F., p. 40 (Trang) ; H., p. 146 (Koh Samui).

Cacomantis merulinus querulus, L., p. 101 (Koh Lak) ; K., p. 98 (Koh Lak) ; L., p. 98 (Junk Seylon).

♂. Mamok, Pakchan, Peninsular Siam, 28 February 1919 (No. 4315).

♂ ad, ♀ imm. Tapli, Pakchan, Peninsular Siam, 9 March 1919 (Nos. 4321, 4449).

♂ imm. Tasan, Chumporn, Peninsular Siam, 17 March 1919 (No. 4658).

"Iris crimson or reddish ; bill black, gape yellow ; feet ochreous or yellow."

Total length ♂, 216, 225, 212 ; ♀, 215 ; wing ♂, 103, 109, 107 ; ♀, 104 ; tail ♂, 115, 119, 113 ; ♀, 107 ; tarsus ♂, 16, 18, 16 ; ♀, 16 ; bill from gape ♂, 23, 22.5, 23 ; ♀, 24 mm.

The paler southern race, *C. m. threnodes* Cab. and Heine, of the Malay States, has not yet been met with in Peninsular Siam.

243. *Cacomantis sepulchralis sepulchralis* (Müller).

Cuculus sepulchralis, S. Müller, Verh. Nat. Gesch. Land- u. Volkenk, 1839-44, p. 177, note (Java and Sumatra).

Cacomantis sepulchralis sepulchralis, J., p. 155 (Koh Muk ; Trang).

♂ ad, ♀ imm. Tapli, Pakchan, Peninsular Siam, 4 March 1919 (Nos. 4416, 4423).

"Iris brown, orbital ring yellow ; bill black, reddish at base ; feet yellow, claws dark."

Total length ♂, 225 ; ♀, 240 ; wing ♂, 107 ; ♀, 112 ; tail ♂, 125 ; ♀, 127 ; tarsus ♂, 15 ; ♀, 16 ; bill from gape ♂, 23.5 ; ♀, 25 mm.

Two examples were obtained on Khao Luang, Nakawn Sri Tamarat, in March 1922.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

244. *Chalcococcyx maculatus* Gm.

Trogon maculatus, Gmelin, Syst. Nat. i, 1788, p. 404 (Ceylon: errore! Substitute Pegu).

Chalcococcyx maculatus, F., p. 41 (Trang); L., p. 98 (Ghirbi).

Both this species and *C. xanthorhynchus* are commoner in the north of the Peninsula than the south, but are everywhere rare.

Though Gmelin described this bird as from Ceylon, the species does not seem to occur there and we have therefore selected Pegu for the typical locality.

245. *Chalcococcyx xanthorhynchus* (Horsf.).

Cuculus xanthorhynchus, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 179 (Java).

Chalcococcyx xanthorhynchus, A., p. 506 (Bankasoon and Tavoy); E., p. 105 (Patani); F., p. 41 (Trang); H., p. 93 (Bandon); Shelley, Cat. Birds B. M. xix, 1891, p. 291 (Ghirbi; Bankasoon; Tavoy); Williamson, Journ. Nat. Hist. Soc. iii 1918, p. 25 (Patani and Bangkok).

Chrysococcyx xanthorhynchus, C. ii, p. 114 (Malewoon); Salvad., Ann. Mus. Civ. Gen. (2) vii, 1889, p. 433 (Malewoon).

246. *Chalcococcyx malayanus malayanus* (Raffles).

Cuculus malayanus, Raffles, Trans. Linn. Soc. xiii, 1822, p. 286 (Malay Peninsula).

Chalcococcyx malayanus, E., p. 105 (Patani).

Possibly a winter visitor: the specimen from Patani is the only record for the Kingdom of Siam.

247. *Eudynamis scolopacea malayana* (Cab. & Heine).

Eudynamis malayana, Cabanis and Heine, Mus. Hein. iv, 1862, p. 52 (Sumatra); A., p. 162 (Tavoy to Bopyin); B., p. 54 (Junk Seylon); C. ii, p. 119 (Burma and Malay Peninsula).

Eudynamis honorata, D., p. 74 (Patani); E., p. 105 (Patani); G., p. 150 (Ratburi and Petchaburi).

Eudynamis orientalis, F., p. 41 (Trang); H., p. 146 (Koh Samui and Koh Pennan).

Eudynamis orientalis malayana, J., p. 161 (Trang; Koh Pennan; Koh Samui; Langkawi); K., p. 99 (Tachin); L., p. 98 (Junk Seylon; Pulau Panjang).

Eudynamis orientalis honorata, J., p. 161 (Langkawi).

♀. Pulau Mohea, Peninsular Siam, 2 February 1919 (No. 3917).

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S., 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1906.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

♂, 2 ♀. Koh Pipidon, Ghirbi Bay, Peninsular Siam, 3-4 February 1919 (Nos. 3927-28, 3934).

♂. Tung Pran, Takuatung, Peninsular Siam, 12 February 1919 (No. 3960).

♀. Mamok, Pakchan, Peninsular Siam, 28 February 1919 (No. 4307).

"Iris red; bill bluish or greenish slate; feet plumbeous green."

Total length ♂, 395, 423; ♀, 408, 398, 428, 417; wing ♂, 198, 198; ♀, 201, 196, 210, 207; tail ♂, 194, 203; ♀, 203, 198, 208, 203; tarsus ♂, 31, 33; ♀, 38, 31, 33.5, 35; bill from gape ♂, 36, 39; ♀, 42, 40, 40, 39 mm.

From their larger dimensions this series would appear to belong to the Malayan form, *E. s. malayana*, but discrimination between this and the closely allied small Indian form, *E. s. scolopacea* (Linn.), is difficult and uncertain. Hartert gives the wing-length of the latter as 187-197 mm. (Nov. Zool. x, 1903, p. 236), and no Siamese birds we have seen are so small.

248. *Centropus sinensis intermedius* (Hume).

Centrocoryx intermedius, Hume, Stray Feathers, i, 1873, p. 454 (Dhoon; Dacca; Thayetmyo); A., p. 168 (Tavoy to Pakchan).

Centrocoryx rufipennis, B., p. 59 (Junk Seylon).

Centrocoryx eurycerus, B., p. 60 (Malay Peninsula).

Centropus sinensis, D., p. 74 (Patani); E., p. 105 (Patani); F., p. 41 (Trang); G., p. 150 (Ratburi and Petchaburi).

Centropus sinensis intermedius, H., pp. 92, 146 (Bandon; Koh Samui; Koh Penman); J., p. 157 (Koh Muk and Koh Lontar; Trang); K., p. 99 (Koh Lak); L., p. 99 (Ghirbi; Junk Seylon; Pulau Panjang); M., p. 441 (Peninsular Siam).

♂ ? Koh Pipidon, Ghirbi Bay, Peninsular Siam, 5 February 1919 (Nos. 3942,3).

♂, ♀ ? Koh Yam Yai, Renong, Peninsular Siam, 18 February 1919 (Nos. 4108, 4110).

♂ imm. Koh Tung Pran, Takuapah, Peninsular Siam, 18 February 1919 (No. 4100).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

2 ♀. Nanchuk, Pakchan, Peninsular Siam, 25 February 1919 (Nos. 4221, 4229).

♂. Hat Sanuk, S. W. Siam, 14 April 1919 (No. 5298).

"Iris carmine; bill and feet black."

Total length ♂, 497, 498, 500; ♀, 475, 498, 560; wing ♂, 205, 197, 190; ♀, 196, 198, 209; tail ♂, 268, 256, 272; ♀, 258, 260, 280; tarsus ♂, 54, 48, 49; ♀, 52.5, 55, 55; bill from gape ♂, 47, 43, 41; ♀, 45, 47, 52 mm.

Birds from Patani probably belong to the South Malay and Sumatran race, *Centropus s. bubutus* (Horsf., Trans. Linn. Soc. xiii, 1821, p. 180), which has a longer wing and a longer but narrower tail, and is duller chestnut in colour.

249. *Centropus bengalensis javanicus* (Dumont).

Ouculus javanicus, Dumont, Dict. Sci. Nat. xi, 1818, p. 144 (Java).

Centropus bengalensis, A., p. 171 (Tavoy to Malewcon); G., p. 150 (Ratburi and Petchaburi).

Centrococcyx bengalensis, B., p. 58 (Junk Seylon); C. ii, p. 127 (Tenasserim).

Centropus javanicus, Shelley, Cat. Birds, B. M. xix, 1891, p. 355 (Tavoy; Bankasoon; Malewcon; Siam).

Common in long grass.

250. *Zanclostomus javanicus pallidus* Rob. & Kloss.

Zanclostomus javanicus pallidus, Rob. & Kloss, Journ. Fed. Malay States Mus. x, 1921, p. 203 (Kedah).

Zanclostomus javanicus, A., pp. 107, 506 (Tavoy to Malewcon); B., p. 57 (Junk Seyon); E., p. 104 (Patani); F., p. 42 (Trang); H., p. 94 (Bandon); Robinson and Kloss, Journ. Fed. Malay States Mus. vi, 1916, p. 226 (Kedah).

A hill bird, fairly common in heavy jungle.

The typical form, a more deeply coloured bird, is confined to Java, whence we have large series

251. *Rhopodytes tristis longicaudatus* Blyth.

Phaenicophaeus longicaudatus, Blyth, Journ. Asiat. Soc. Bengal, x, 1841, p. 923 (Moulmein); I., p. 104 (Koh Lak); K., p. 100 (Koh Lak).

Rhopodytes tristis, A., p. 162 (Tavoy; Tenasserim town); C. ii, p. 161 (Mergui; Tenasserim river); E., p. 103 (Patani); F., p. 42 (Trang); H., pp. 94, 146 (Bandon and Koh Samui).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♂ ad. Mamok, Pakchan, Peninsular Siam. 28 February 1919 (No. 4306).

♂ ad., ♀ ad. Tapli, Pakchan, Peninsular Siam, 6-8 March 1919 (Nos. 4445, 4506).

3 ♂, 1 ♀. Koh Lak, S. W. Siam, 2-7 April 1919 (Nos. 4928, 4970, 5117, 5137).

3 ♂, 1 ♀, 1 unsexed. Hat Sanuk, near Koh Lak, S. W. Siam 12-17 April 1919 (Nos. 5262, 5270, 5314, 5343, 5370).

"Iris red, orbital skin red; bill green; feet plumbeous."

Total length ♂, 587, 555, 603, 555, 555, 530, 568, 618; ♀, 468, 591, 503; wing ♂, 153, 150, 162, 159, 157, 155, 160, 169; ♀, 162, 156, 158; tail ♂, 390, 380, 420, 395, 373, 375, 410, 435; ♀, 290, 411, 340; tarsus ♂, 38, 36, 36, 41, 37, 35, 36, 36; ♀, 37, 37, 37; bill from gape ♂, 39, 41, 41, 38, 40, 37, 37, 38; ♀, 37, 37, 38, mm.

Hartert's *Rhopodytes tristis hainanus* of Hainan (Nov. Zool. xvii, 1910, p. 218) does not differ in size of wing from Blyth's earlier described but overlooked form from Tenasserim, and unless there exist differential characters hitherto unnoted, that name will have to rank as a synonym of *R. t. longicaudatus*.

252. *Rhopodytes diardi* (Less.).

Melias diardi, Lesson, *Traité d'Ornith.*, 1831, p. 132 (Sumatra).

Rhopodytes diardi, A., p. 163 (Mergui to Malewoon); D., p. 75 (Patani); E., p. 103 (Patani); F., p. 42 (Trang); L., p. 99 (Ghirbi).

253. *Rhopodytes sumatranus* (Raffles).

Cuculus sumatranus, Raffles, *Trans. Linn. Soc.* xiii, 1822, p. 287 (Sumatra).

Rhopodytes sumatranus, A., p. 164 (Mergui to Malewoon); B., p. 56 (Malay Peninsula); J., p. 158 (Trang); L., p. 29, (Ghirbi); Salvad., *Ann. Mus. Civ. Gen.* (2) vii, 1889, p. 433 (Malewoon).

Poliococcyx sumatranus, C. ii, p. 123 (S. Tenasserim).

I. Gyldenstolpe, *Kungl. Sv. Vet. Akad. Handl.* 56, No. 2, 1916.

J. Robinson, *Journ. F. M. S. Mus.* vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, *Journ. N. H. Soc. Siam.* iii, 1919.

M. Baker, *Journ. N. H. Soc. Siam*, iii, 1919.

(first part).
Baker, *Journ. N. H. Soc. Siam*, iii, 1919.

(second part).

M. I. Baker, *Journ. N. H. Soc. Siam*, iv, 1920.

(third part).

254. *Rhinortha chlorophaea chlorophaea* (Raffles).

Cuculus chlorophaea, Raffles, Trans. Linn. Soc. xiii, 1822, p. 288 (Sumatra).

Rhinortha chlorophaea, A., p. 166 (Travoy to Bankasoon); B., p. 57 (Junk Seylen); E., p. 104 (Patani); F., p. 42 (Trang).

Rhinortha chlorophaea chlorophaea, M., p. 440, (Tung Song, Peninsular Siam).

♂. Tapli, Pakchan, Peninsular Siam, 3 March 1919 (No. 4377).

"Iris dark; orbital skin verditer; bill green; feet grey."

Total length 330; wing 116; tail 180; tarsus 27; bill from gape 33 mm.

255. *Phoenicophaës curvirostris erythrognathus* Bp.

Phoenicophaës erythrognathus, Bonaparte, Consp. Av., i, 1850, p. 98 (Sumatra); A., pp. 165, 506 (Tavoy to Malewoon); M., p. 449 (Peninsular Siam).

Rhamphococcyx erythrognathus, B., p. 57 (Junk Seylon and Malay Peninsula); Salvad. Ann. Mus. Civ. Gen. (2) vii, 1889, p. 433 (Malewoon).

Urococcyx erythrognathus, D., p. 76 (Patani); F., p. 43 (Trang); H., p. 94 (Bandon); L., p. 99 (Ghirbi and Junk Seylon).

3 ♂. Tasan, Chumporn, Peninsular Siam, 20-23 March 1919 (Nos. 4724, 4772, 4817).

"Iris orange, orbital skin crimson; bill green, red at base; feet greenish plumbeous."

Total length 465, 442, 460; wing 165, 170, 110; tail 280, 255, 260; tarsus 45, 42, 41; bill from gape 42, 45, 46 mm.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Inselalanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

CAPITONIDÆ.

BARBETS.

1	No green on plumage; no rictal bristles	<i>Calorhamphus fuliginosus hayi</i>	
	Prevailing colour green; long rictal bristles	.. ..	2
2	Head and neck brown, more or less streaked	.. ..	3
	Head and neck with bright colours	.. ..	4
3	Ear-coverts and breast brownish	<i>Thereiceryx lineatus intermedius</i>	
	Ear-coverts and breast green	<i>T. f. faiostriata</i>	
4	Breast striped	<i>Xantholæma leucocephala indica</i>	
	Breast not striped	.. ..	5
5	Crown green	<i>Cyanops incognita</i>	
	Crown not green	.. ..	6
6	Lower cheeks bright yellow	.. ..	12
	Lower cheeks not bright yellow	.. ..	7
7	Crown red	<i>Cholorhea mystacophanes</i> (see 13)	
	Crown not red	.. ..
	Forehead black	.. ..	11
8	Forehead yellow	<i>Cyanops henrici</i>	
	Forehead red	.. ..	9
9	Crown blue	<i>C. davisoni</i>	
	Crown yellow	.. ..	10
10	Ear-coverts and lower throat silvery grey	<i>C. ramsayi</i>	
	Ear-coverts and lower throat blue	<i>C. oorti</i>	
11	Subocular patch pure red, a distinct black gorget	<i>C. d. duvauceli</i>	
	Subocular patch red and yellow, no marked black gorget	<i>C. d. stuarti</i>	
12	Crown uniform red	<i>Cholorhea r. rafflesii</i>	
	Crown banded	<i>Ch. chrysopogon lactus</i>	
13	Forehead yellow	<i>Ch. mystacophanes</i> , ♂	
	Forehead blue	<i>Ch. mystacophanes</i> , ♀	

256. *Calorhamphus fuliginosus hayi* (J. E. Gray).

Bucco hayi, Gray, Zool. Misc. 1932, p. 33 (Malacca).

Calorhamphus hayi, A., p. 149 (Bankasoon and Malewoon); C. ii. p. 138; F., p. 43 (Trang); H., p. 165 (Pulau Lontar); L., p. 99 (Tongkah or Puket).

Calorhamphus fuliginosa hayi, M., p. 431 (Peninsular Siam).

♂. Tasan, Chumporn, Peninsular Siam, 16 March 1919 (No. 4627).

"Iris rich brown; bill black; feet orange vermillion."

Total length 177; wing 78; tail 56; tarsus 25; bill from gape 29 mm.

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| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part.) |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part.) |
| K. Kloss, Ibis, 1918. | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part.) |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | |

This species is strictly an inhabitant of evergreen forests: the present bird is the northernmost recorded.

257. *Chotorhea chrysopogon laetus* Rob. & Kloss.

Chotorhea chrysopogon, D., p. 72 (Patani); F., p. 43 (Trang); H., p. 94 (Bandon).

Chotorhea chrysopogon laetus, Robinson & Kloss, Journ. Fed.

Malay States Mus. viii, pt. ii, 1918, p. 141 (Negri Sembilan).

Chotorhea chrysopogon chrysopogon, M., p. 429 (Peninsular Siam).

Common in heavy jungle in Trang and Bandon, where it attains its northern limit.

There is no variation in this barbet through its range in the Malay Peninsula. The mainland form is distinguished from the typical Sumatran race by its deeper coloured yellow malar patches, and from the Bornean *Ch. chrysopogon chrysopsis** by its larger size, duller forehead without bright yellow tips to the feathers, and paler ear-coverts.

258. *Chotorhea rafflesii rafflesii* (Lesson).

Bacco Rafflesii, Lesson, Rev. Zool. 1839, p. 137 (Sumatra).

Chotorhea versicolor, F., p. 43 (Trang); Williamson, Journ. Nat.

Hist. Soc. Siam, iii, 1918, p. 24 (Patani).

Megalaema versicolor, B., p. 74 (Coast adjacent to Junk Seylon?)

"Iris chestnut; bill black, slaty at base; feet greenish lead."

This Gaudy Barbet is common in the interior of Trang, but is not recorded from further north than the vicinity of Puket, whence Müller obtained one example.

Specimens from the whole length of the Peninsula, Trang, Perlis, Kedah, Perak, Selangor and Pahang exhibit no differences *inter se*; but we have been unable to compare them with typical Sumatran birds. Bornean birds, on the other hand, even when fully adult, have a paler blue superciliary stripe, and the quadrate yellow spot on the sides of the throat paler, less orange yellow, though, with Shelley, we can see no differences in the extent of the red on

* *Megalaema chrysopsis*, Goffin, Mus. Pays Bas, Buccones, 1863, p. 15.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

the crown and nape. They should be known as (*Cholorhea rafflesii borneensis* (*Megalaema versicolor borneensis*, Blasius, Verh. Z. b. Ges. Wien, xxxiii, 1883, p. 25.)

Stresemann has pointed out (Anz. Orn. Ges. Bayern, 1921, p. 24) that *Bucco versicolor* Raffles, the name by which this species has universally been known, is preoccupied by *Bucco versicolor* P. L. S. Müller, and that the next oldest name is Lesson's.

259. *Chotorhea mystacophanes* (Temm.).

Bucco mystacophanes, Temminck, Pl. Col. 315, 1827 (Sumatra).

Bucco quadricolor, Eyton, P. Z. S., 1839, p. 105 (Malacca).

Megalaema mystacophanes, A., p. 152 (Nwalabo to Malewoon); B., p. 75 (Junk Seylon).

Chotorhea mystacophanes, C. ii, p. 72; F. p. 43 (Trang); H., p. 94 (Bandon).

Cyanops mystacophanes, D., p. 73 (Patani); F., p. 102 (Patani); M., p. 429 (Peninsular Siam).

Cyanops mystacophanes aurantiifrons, L., p. 100 (Ghirbi).

♀. Pangnga river, W. Peninsular Siam, 11 February 1919 (No. 3950).

♂, ♀. Mamok, Pakchan Estuary, Peninsular Siam, 28 February – 3 March 1919 (Nos. 4314, 4391).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 14 March 1919 (No. 4858).

5 ♂, 4 ♀. Tasan, Chumpon, Peninsular Siam, 16 – 27 March 1919 (Nos. 4628, 4648, 4669, 4715, 4820, 4841–2, 4867, 4911).

Male. "Iris rich brown; bill black; feet greenish plumbeous." Female. "Bill black, pale lead at base of lower mandible."

Total length ♂, 213, 208, 232, 211, 215, 198, —; ♀, —, 232, 228, 237, 225, 222; wing ♂, 95, 94, 97, 96, 98, 95, —; ♀, —, 96, 94, 100, 100, 98; tail ♂, 60, 56, 58, 60, 60, 57, —; ♀, —, 60, 58, 58, 58, 58; tarsus ♂, 27, 26, 27, 26, 27, 27, —; ♀, —, 27.5, 26.5, 26, 26, 26; bill from gape ♂, 41, 42, 44, 44, 43, 41, —; ♀, —, 48, 44, 45, 45, 46 mm.

The characters on which we founded *C. m. aurantiifrons* are not stable, and the name cannot be maintained: the orange red fore-

I. Gyllenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

head, in some cases almost uniform with the vertex, is evidently connected with age: but whether it is a sign of youth or very extreme age we are unable to say with certainty, though we incline to the belief that very old birds have a pure yellow forehead.

The very large series in our possession makes it practically certain that the sexes in this barbet, as suggested by Salvadori and Blanford, are widely different. We have no female whatever in which any part of the throat is uniform red, or which possesses a clearly defined yellow or red frontal band. The blue beneath the eyes is always paler and the yellow spot at the base of the bill much reduced. Neither have any of them a marked blue throat-patch. We possess but few juvenile males, but one bird, barely half grown, has the red throat and the blue gular patch beneath it strongly marked.

The species is very much commoner in the southern parts of Peninsular Siam than it is in British Malaya. It has not, however, been recorded from S. W. Siam, where possibly *C. davisoni* takes its place. Stuart Baker again erroneously records Herbert's Tung Song specimen as new to Peninsular Siam, whence it has been repeatedly obtained.

Cyanops incognita (Hume).

Megalaema incognita, Hume, Stray Feathers, ii, 1874, pp. 442, 486 (25 miles north of Yea); A., p. 501 (neighbourhood of Tavoy).

Cyanops asiatica ? *incognita*, M., p. 429 (Tung Song, Peninsular Siam).

This species has been obtained so near the northern boundary of the area here dealt with that it is reasonable to include it among birds which occur in the northern half of the Peninsula. Mr. Stuart Baker identifies specimens as this form with considerable doubt: they are stated to be young birds.

260. *Cyanops davisoni* (Hume).

Megalaema davisoni, Hume, Stray Feathers, v, 1877, p. 108 (Central Tenasserim); A., p. 151.

Cyanops davisoni, C. ii, p. 184; Shelley, Cat. Birds Brit. Mus. xix, 1891, p. 65, pl. iv, fig. 1; H., p. 94 (Khao Nawng, Bandon, 3,500 ft.); G., pp. 137, 149 (Rajburi and Petchaburi).

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Inselalanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

The two specimens recorded from the upper slopes of Khao Nawng were obtained on 23rd and 25th June 1913. Male and female closely resemble each other; but in the latter the scarlet patches on the sides of the throat are only slightly developed. The red occipital patch is much smaller than shown in Shelley's figure, and the yellow tips to the feathers of the frontal red band are practically non-existent, as indeed is mentioned in Hume's original description.

Four birds (1 ♂, 3 ♀) obtained on Khao Luang, 4,500 ft., Nakorn Sri Tamarat, in March 1922, precisely agree with the two from Khao Nawng.

Possibly *C. davisoni* is only the fully adult *C. incognita*, which has precedence by three years.

* * * * *

There are four other barbets that may possibly be found in Peninsular Siam — all being birds with the general plumage green:—

***Cyanops oorti* (S. Müll.).**

Throat rich yellow, succeeded by blue; a narrow frontal red band; crown pale yellow.

This is only likely to occur on high elevations in the south. It is elsewhere known from Sumatra and the mountains of the British portion of the Malay Peninsula, with an allied form, *C. o. annamensis*, in the mountains of Annam.

***Cyanops ramsayi* (Wald.).**

Throat yellow, succeeded by a broad silvery grey gorget, forehead broadly red, crown bright yellow; sides of the head silvery grey.

This also is only likely to be found at considerable elevations: it is known from Karennee, North Tenasserim, North Siam, and the mountains of Perak, Selangor and Pahang.

***Cyanops henricii* (Temm.).**

Throat blue, without yellow; forehead and superciliary stripe rich yellow almost surrounding a blue crown.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

This is a lowland species; it will be probably found to occur in Patani as it is known from North Kelantan.

Cyanops asiatica (Lath.).

Like *C. davisoni* but rather larger: a broad black median crown-band succeeded by a red forehead, the posterior feathers tipped with yellow forming a narrow line of that colour.

This species may possibly occur: it is known from North Siam.

* * * * *

261. *Thereiceryx lineatus intermedius* Stuart Baker.

Megalaema hodgsoni, A., p. 151 (Tavoy; Shymotee).

Cyanops hodgsoni, C. ii, p. 132.

Thereiceryx hodgsoni, F., p. 102 (Patani).

Cyanops lineata, E., p. 73 (Kedah).

Thereiceryx lineatus hodgsoni, Hartert, Nov. Zool. ix, 1902, p. 546 (Kelantan).

Thereiceryx lineatus, Kloss, Journ. Fed. Malay States Mus. iv, 1911, p. 139 (Trengganu); G., p. 149 (Petchaburi and Rajaburi); K., p. 100 (Lat Bua Kao, E. Siam).

Thereiceryx lineatus intermedius, Stuart Baker, Bull. Brit. Orn. Club, xxxix, 1918, p. 9 (Fahpoon, N. Tenasserim); id., Ibis, 1919, p. 214; M., p. 427.

♂, ♀. Victoria Point, S. Tenasserim, 23-24 February 1919 (Nos. 4168-4186).

6 ♂. Namchuk, Pakchan Estuary, Peninsular Siam, 25-26 February 1919 (Nos. 4202-3, 4210, 4214, 4251-2).

2 ♀. Mamoh, Pakchan Estuary, Peninsular Siam, 26 February 1919 (Nos. 4266-7).

♂. Tapli, Pakchan Estuary, Peninsular Siam, March 1919 (No. 4426).

3 ♂, 2 ♀. Koh Lak, Rajburi, S. W. Siam, 4-9 April 1919 (Nos. 5057, 5067, 5070, 5170, 5198).

♂, 2 ♀. Hat Sanuk, Rajburi, S. W. Siam, 13-15 April 1919 (Nos. 5271, 5278, 5304).

"Iris dark brown, orbits pale chrome; bill pale brownish horn; feet yellow."

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Total length ♂	275, 276, 276, 270, 269, 268, 270, 275, 254, 272, 272, 263 mm.
Wing	127, 126, 128, 123, 125, 125, 125, 119, 121, 125, 119 (worn), 126 mm.
Tail	83, 105, 90, 85, 88, 90, 88, 82, 78, 90, 86, 82, mm.
Tarsus	31, 29.5, 30, 30, 31, 29, 29, 31, 25, 28.5 27.5, 26.5 mm.
Bill from gape	39.5, 41, 41, 39, 40.5, 39.5, 42, 40, 36, 37.5, 41, 39 mm.
Total length ♀	273, 282, 270, 255, 270, 269, 278 mm.
Wing	121, 127, 121, 118, 120, 124, 127 mm.
Tail	86, 87, 84, 78, 82, 85, 85 mm.
Tarsus	30, 28, 29, 30, 29, 30, 26 mm.
Bill from gape	38 app., 41, 38, 41, 40, 41, 42 mm.

It is curious that Davison should not have obtained this barbet at Pakchan Estuary, as it was very common both on the Siamese side and at Victoria Point, where its gong-like note at once attracted attention.

Our considerable series noted above is very constant both in size and colour, the dark edges to the feathers of the breast being not nearly so marked as on the birds from Eastern Siam, which are freshly moulted.

The racial divisions as laid down by Baker seem well justified, but we should like to hear more details about the type of *Megalaema maclellandi* Horsf. and Moore, from Assam. It is within the bounds of possibility that this name is the one really applicable to the present form.

As noted in the synonymy, the species spreads as far south as the coast of Trengganu. It has never been obtained in the Federated Malay States.

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- I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part.)
J. Robinson, Journ. F. M. S. Mus. vii, 1917. Baker, Journ. N. H. Soc. Siam, iii, 1919.
K. Kloss, Ibis, 1918. (second part.)
L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part.)

262. *Thereiceryx faiostratus faiostratus* (Temm.).

Bucco faiostratus, Temm. Pl. Col. v, 1831, pl. 527 (Cochin China).

Thereiceryx flavostrictus, K., p. 100 (Lat Bua Kao, Eastern Siam).

Thereiceryx faiostricta faiostricta, Stuart Baker, Ibis, 1919, p. 216: M., p. 428 (S. E. Siam).

♀. Hat Sanuk, Rajburi, S. W. Siam, 16 April 1919 (No. 5344).

"Iris reddish orange, orbits sage; upper mandible black, tomia pale, lower mandible pale horn; feet greenish."

Total length 248; wing 113; tail 70; tarsus 26; bill from gape 38 mm.

Agrees closely in size and other particulars with specimens from Eastern Siam and Annam. The occurrence is an interesting extension of range, as the species does not appear to have been recorded from west of the Menam river.

263. *Mesobucco duvauceli stuarti* Rob. and Kloss.

Mesobucco duvauceli stuarti, Robinson & Kloss, Journ. N. H. Soc. Siam, iii, 1919, p. 100 (Junk Seylon).

Megalaema cyanotis, A., p. 155 (partim: spms. from Nwalabo?, Tavoy? and Malewoon).

Xantholaema cyanotis, C. ii, p. 137 (Southern birds).

Xantholaema duvauceli, B., p. 75 (Puket or Junk Seylon).

Mesobucco duvauceli, E., p. 102 (Nongchik, N. Patani).

Mesobucco cyanotis, F., p. 43 (Trang); H., p. 94 (Bandon).

Cyanops duvauceli robinsoni, Stuart Baker, Bull. Brit. Orn. Club, xxxix, 1918, p. 20 (partim; Peninsular Siam and Burma); id., Ibis, 1919 p. 219 (partim: Malay Peninsula, excluding the Malay States).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 2 March 1919 (No. 4350).

"Iris dark brown; bill black, base of lower mandible slate; feet sage green."

Total length 168; wing 77; tail 49; tarsus 18; bill from gape 23 mm.

By the kindness of the Director of the Zoological Survey of India we have before us a series of this genus from the collection of the Indian Museum, including the type of *Bucco cyanotis* Blyth, Journ. Asiat. Soc. Bengal, xvi, 1847, p. 465 (Aracan), and find that

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1906.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Mesobucco cyanotis orientalis, Robinson, Ibis, 1915, p. 738, from the Siamese south-eastern frontier, is synonymous with it, as Mr. Stuart Baker has already shown. On the other hand, Peninsular Siam birds south to Perlis (thirteen adult birds examined) differ from the types of *M. d. cyanotis* and *M. e. orientalis* in being distinctly smaller with the wing apparently always under 80 mm. The black throat-spot is always obsolescent and the ear-coverts almost unmixed verditer blue, except in the bird from Perlis which is approaching *M. d. duraceli*. We have named this form, as above, *M. d. stuarti*. Stuart Baker has named the bird from Klang, Selangor, *C. d. robinsoni*, giving as the range the whole of the Malay Peninsula, and stating that the ear-coverts are mixed blue and black and the black spot on the breast small. As regards birds from Perak, Selangor and further south, this is however not the case: somewhat immature birds, in which the black forehead is not sharply defined, have frequently the ear coverts mixed with blue, but fully adult birds often have them as black as in specimens from Sumatra and Borneo. In very many south Peninsula birds the black spot on the breast is fully as pronounced as in Bornean examples, of which we have a very large series. Sumatran birds are rather smaller and are *Mesobucco duraceli duraceli* (Less.), while the Malayan bird, wing 73-79, and the Bornean, wing 72-76, if any division is to be made, will have to be known as *M. d. borneensis* Parrot (Abhandl. Ak. Wissensch. Math. Phys. München, 1907, Kl. xxiv, pp. 149, 288). We have seen no birds from South Patani, nor are any on record; but, since Perlis examples are intermediate, they may possibly belong to the southern race.

Perhaps *very* large series of birds from the British portion of the Malay Peninsula and from Borneo may make it possible to retain the name *M. d. robinsoni* for the former, but on the very considerable numbers now in our possession we are quite unable to separate them.

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl.

56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

The type locality decides the question: the name *M. d. robinsoni* can only apply to birds from Selangor and those which agree with them, viz., birds of the Malay States. Those from more northern parts of the Peninsula, though associated by Baker with these, are different.

264. *Xantholaema haemacephala indica* (Lath.).

Bucco indicus, Lath. Ind. Orn. i, 1790, p. 205 (India).

Xantholaema haemacephala, A., p. 155 (Tavoy to Bankasoon); C. ii, p. 136; B., p. 75 (Puket or Junk Seylon); F., 44 (Trang); H., p. 95 (Bandon); G., p. 149 (Petchaburi and Rajaburi); Robinson & Kloss, Journ. Fed. Malay States Mus. viii, pt. ii, 1918, pp. 142, 143 (Sumatra); L., p. 101 (Junk Seylon; Ghirbi; Pulau Panjang); I., p. 101 (Koh Lak); Salvad. Ann. Mus. Civ. Gen. (2) vii, 1889 p. 432 (Malewoon); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1917, p. 325 (S. W. and Peninsular Siam).

Xantholaema haemacephala indica, Stuart Baker, Ibis, 1919, p. 221; M., p. 431 (Peninsular Siam).

♂. Namchuk, Pakchan Estuary, Peninsular Siam, 24 February 1919 (No. 4200).

♂, ♀. Koh Lak, Rajburi, Peninsular Siam, 1-3 April 1919 (Nos. 4925, 5011).

"Iris hazel, orbital ring crimson lake; bill black, pale at base; feet crimson."

Total length ♂, 155, 164; ♀, 161; wing ♂, 84, 24; ♀, 80; tail ♂, 38, 36; ♀, 38; tarsus ♂, 18, 20; ♀, 21; bill from gape ♂, 23, 23; ♀, 23 mm.

Baker's conclusions are in the main the same as ours. In the absence of specimens from the Philippines we refrained from dividing the species into races; but as he has now shown that the Philippine bird has a very much larger bill, *X. h. indicus* is correctly indicated as the name for the continental race.

We cannot, however, agree that the continental and Sumatran races are identical. We have now compared over thirty specimens of the latter with an equal number of the former, and find that in all the Sumatran birds the yellow patch below the scarlet one on the

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

breast is very much reduced or even entirely lacking: the difference is so striking and so constant that Parrot was fully justified in separating the Sumatran bird as *Megalacema haemacephala delicata* (Abh. K. Bayer. Acad. d. Wissensch. 11. Kl. Bd. 24, 1 Abh., 1907 p 169: Deli, N. E. Sumatra). *Bucco rafflesius* Boie, applied to this bird, is a nomen nudum.

INDICATORIDAE.

INDICATORS OR HONEY-GUIDES.

265. *Indicator archipelagicus* Temm.

Indicator archipelagicus, Temminck, Pl. Col. 1832, pl. 542, fig. (Borneo); F., p. 44 (Trang).

The only record for Siam is the bird obtained by us in Trang in 1909.

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| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| 56, No. 2, 1916. | (first part). |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| K. Kloss, Ibis, 1918. | (second part). |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. |
| | (third part). |

PICIDAE.

WOODPECKERS.

1	{ Tail feathers with stiff shafts (Picinæ)	2
	{ Tail feathers with flexible shafts (Picumninæ)	24
2	{ Toes four	3
	{ Toes three	22
3	{ Primaries spotted or banded	4
	{ Primaries uniform	19
4	{ With more or less green in the plumage	5
	{ With no clear green in the plumage	12
5	{ Lower surface without stripes or cross-bars	6
	{ Lower surface with either stripes or cross-bars	9
6	{ Throat uniform	7
	{ Throat chequered black and white	8
7	{ Wings largely olive	<i>Picus canus microrhynchus</i>
	{ Wings largely crimson	<i>P. puniceus continentis</i>
8	{ Breast rufous	<i>Chrysophlegma mentale humei</i>
	{ Breast not rufous	<i>C. flavinucha lylei</i>
9	{ Under parts cross-banded	<i>Callolophus miniatus</i>
	{ Under parts striped	10
10	{ Breast uniform	<i>Picus vittatus eisenhoferi</i>
	{ Breast striped like belly	11
	{ Dark colour predominating below; rump greenish yellow or green	<i>P. viridanus</i>
11	{ Pale colour predominating below; rump yellow or orange	<i>P. myrmecophoneus</i>
12	{ Back unbarred	13
	{ Back cross-barred	15
13	{ Lower parts uniform	14
	{ Lower parts squamated	<i>Chrysocolaptes g. guttieristatus</i>
	{ Rump white or yellow	<i>C. validus xanthopygius</i>
14	{ Rump dull crimson	<i>Blythipicus rubiginosus</i>
	{ Rump brown	<i>B. pyrrhotis</i>
15	{ Rump uniform cream	<i>Meiglyptes tristis grammithorax</i>
	{ Rump barred like back	16
16	{ Upper parts not black and white	17
	{ Upper parts black, barred with white	18
17	{ Colour blackish brown, barred buff	<i>M. tukki tukki</i>
	{ Colour rufous, barred black	<i>Micropternus brachyurus</i>
18	{ Vent red: wing about 3.75 inches	<i>Dryobates analis longipennis</i>
	{ Vent like belly: wing about 3.75 inches	<i>D. canicapillus canicapillus</i>
19	{ Size small: wing less than 4 inches	20
	{ Size large: wing over 8 inches	21
20	{ Throat creamy	<i>Hemicircus c. canente</i>
	{ Throat grey	<i>H. coneretus sordidus</i>
21	{ General colour black	<i>Thriponax javensis</i>
	{ General colour grey	<i>Mülleripicus pulverulentus harterti</i>
22	{ Lower parts squamated	<i>Dinopium javanense</i>
	{ Lower parts uniform	23

A. Hume & Davison, *Stray Feathers*, vi, 1878.B. Müller, *Die Ornithologie der Insel Salanga*, 1882.C. Oates, *Birds Brit. Burmah*, Vols. i & ii, 1883.D. Bonhote, *P. Z. S.* 1901, Vol. i.E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.F. Robinson and Kloss, *Ibis*, 1910-11.G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

23	Throat like the breast	<i>Gecinulus viridis</i>
	Throat brownish buff	<i>Chloropicoides rafflesi peninsularis</i>
24	Under surface white, spotted black	<i>Picumnus innominatus malayorum</i>
	Under surface uniform rufous in adults, green in young	25
25	A white stripe above the eye	<i>Sasia ochracea reichenowi</i>
	No white stripe above the eye	<i>S. abnormis</i>

266. *Picus vittatus eisenhoferi* Gyldenstolpe.

Picus vittatus eisenhoferi, Gyldenstolpe, Ornith. Monatsber, 1916, p. 28 (North Siam).

Gecinulus vittatus eisenhoferi, Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1917, p. 320 (S. W. Siam).

Picus vittatus vittatus, Baker, Ibis, 1919, p. 189; M., p. 420.

This large race of *G. vittatus* does not seem to have been met with south of Nong Khae and Hua Hin, whence came Williamson's specimens: and no other examples of the species have been met with between these localities and the Langkawi Islands, where occurs an apparently isolated form, *P. v. connectens*,¹ distinguished by its dark grass-green back and wings and lack of bronze tinge. It is intermediate in size between *P. v. eisenhoferi* and *P. v. vittatus*, which is known in the Malay States from Selangor southwards.

267. *Picus viridanus* (Blyth).

Picus viridanus, Blyth, Journ. Asiat. Soc. Bengal, xii, 1843, p. 1000 (Aracan); L., p. 89 (Koh Lak).

Gecinulus vittatus (non Vieill.); A., p. 136 (Tavoy to Bankasoon).

Gecinulus weberi, B., p. 69 (Puket or Junk Seylon).

Gecinulus viridanus, C. ii, p. 48; E., p. 101 (Patani); F., p. 45 (Trang); H., p. 95 (Bandon); J., p. 164 (Telibun; Pulau Muntia; Pulau Lontar); K., p. 104 (Koh Lak); L., p. 101 (Junk Seylon; Pulau Panjang; Ghirbi); Salvad., Ann. Mus. Civ. Gen. (2) vii, 1889, p. 432 (Malewoon).

Picus vittatus viridanus, Stuart Baker, Ibis, 1919, p. 189 (critical remarks); M., p. 420 (Patiyu).

♂. Tung Pran, Takuatung, Peninsular Siam, 14 February 1919 (No. 4009).

2 ♀. Koh Rah, Takuapah Inlet, Peninsular Siam, 15-17 February 1919 (Nos. 4029, 4049).

¹ Robinson and Kloss, Bull. B. O. C. xi, 1919, p. 13 (Langkawi Ids.); F., p. 45; J., p. 164.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part). Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

♂, ♀. Koh Pra Tung, Takuapah Inlet, Peninsular Siam, 17-18 February 1919 (Nos. 4067, 4105).

♀. Renong River, Peninsular Siam, 22 February 1919 (No. 4166).

♂, 2 ♀. Namchuk, Pakchan Estuary, Peninsular Siam, 24-26 February 1919 (Nos. 4205, 4244, 4261).

♂, ♀. Mamok, Pakchan Estuary, Peninsular Siam, 27 February 1919 (Nos. 4278, 4279).

5 ♂, ♀. Koh Lak, Rajburi, Peninsular Siam, 3-10 April 1919 (Nos. 4980, 5173-5, 5194, 5235).

♂, 3 ♀. Hat Sanuk, Rajburi, Peninsular Siam, 12-15 April 1919 (Nos. 5252, 5292, 5300, 5326).

"Iris Indian red or reddish brown, orbits slate; upper mandible black, lower yellow, often dark at tip; feet greenish slate."

Total length ♂, 288, 313, 305, 306, 305, 303, 305, 293, 290, 310 mm.

Wing 137, 137, 135, 137, 142, 136, 135, 138, 132, 136 mm.

Tail 108, 113, 112, 112, 117, 111, 120, 110, 110, 110 mm.

Tarsus 27, 30, 27, 26, 28, 27, 28, 25, 28, 26 mm.

Bill from gape 38, 39, 39, 38, 37, 39, 37, —, 36.5, 35 mm.

Total length ♀, 305, 305, 287, 298, 310, 293, 290, 297, 293, 294, 298 mm.

Wing 138, 136, 137, 133, 136, 135, 130, 137, 130, 136, 130 mm.

Tail 118, 113, 110, 114, 114, 118, 113, 108, 115, 112, 113 mm.

Tarsus 28, 26, 26, 27, 28, 24, 26, 26, 24, 28, 25 mm.

Bill from gape 39, 40, 37 (imp.), 35, 38, 35, 36, 37, 35, 35, 35 mm.

A. Hume & Davison, *Stray Feathers*, vi, 1878.

B. Müller, *Die Ornithologie der Insel Salanga*, 1882.

C. Oates, *Birds Brit. Burmah*, Vols. i & ii, 1883.

D. Bonhote, *P. Z. S.*, 1901, Vol. i.

E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.

H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

This species is in the main a bird of the sea coast and dry low country scrub and jungle. It is not, so far as our experience goes, found in dense evergreen jungle or in districts of heavy rainfall.

As the above synonymy goes to show, the species is well known in the northern parts of Peninsular, and also in S. W., Siam and we do not therefore quite understand Stuart Baker's remarks that Herbert's birds are the first actual record from that country. Birds obtained by ourselves in Patani and Bandon are emphatically this species, while birds from Junk Seylon are correctly included in the synonym of *viridanus* and not of *vittatus*. We cannot admit that *vittatus* and *viridanus* stand in merely subspecific relationship to each other, seeing that where the ranges of the two species touch or approach there is not the slightest sign of intergradation. *P. viridanus* extends southward on the west side of the Peninsula as far as the State of Perlis and on the east side at least as far as Patani. *P. vittatus*, on the other hand, extends north on the west side as far as the island of Langkawi, where it is slightly differentiated, but otherwise has not been found north of Selangor. It also occurs in Cochin-China, while in Siam proper and Annam it has become the larger form, *P. vittatus eisenhoferi*, which has nothing whatever to do with *G. viridanus*. The extreme variability of the species, commented on by Baker, is equally marked in the series of 50 specimens now before us, but very bright and very dull specimens occur in the same locality: the former seem to correspond to a stage that has become permanent in *P. vittatus eisenhoferi*, from which, of course, *viridanus* can be at once distinguished by having the whole of the underparts striped.

268. *Picus myrmecophoneus* Stresemann.

Picus myrmecophoneus, Stresemann, Verh. Orn. Ges. Bayern xiv, 1920, p. 289. Nom. nov.

Picus striolatus, Blyth, Journ. Asiatic Soc. Bengal, xii, 1843, p. 1000 (Himalayas). Nom. praeocc.

Gecinus striolatus, K., p. 104 (Koh Lak); C. ii, p. 49.

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Picus xanthopygius, Oberholser (nec Bp.), Proc. Biol. Soc. Washington, 32, 1919, p. 8.

The only example on record from our region is that obtained by Kloss at Koh Lak.

269. *Picus canus microrhynchus* Rob. & Kloss.

Gecinus canus microrhynchus, Robinson and Kloss, Bull. Brit. Orn. Club, xl, 1919, p. 12 (Koh Lak, S. W. Siam).

Picus occipitalis, A., p. 501 ('Tavoy')?; C. ii, p. 51 ('Tavoy')?

Gecinus occipitalis, Hargitt, Cat. Birds Brit. Mus. xviii, 1890, p. 59 (Meklong and Petchaburi).

Picus canus hessei, Baker, Ibis 1919, p. 184 (partim: Peninsular Burma and Siam).

♂, ♀. Koh Lak, Rajburi, S. W. Siam, 6-8 April 1919 (Nos. 5102, 5160).

5 ♂, 2 ♀. Hat Sanuk, Rajburi, S. W. Siam, 14-19 April 1919 (Nos. 5291, 5316, 5319, 5320, 5330, 5339, 5401).

"Iris red, orbits slate; bill black, sometimes tinged with greenish; feet greenish slate."

Total length ♂, 323, 332, 316, 313, 296, 312; ♀, 320, 312, 321; wing ♂, 147, 148, 146, 148, 141, 146; ♀, 142, 146, 146; tail ♂, 122, 118, 120, 118, 110, 112; ♀, 113, 116, 122; tarsus ♂, 29, 27.5, 27, 26, 28, 26.5; ♀, 28.5, 27, 28; bill from gape ♂, 43, 43, 43, 41, 41.5, 42; ♀, 42, 43, 40 mm.

Probably ranging from the Meklong river southwards into Peninsular Siam: but not known at present from the west side.

270. *Picus puniceus continentis* (Rob. & Kloss).

Brachylophus puniceus continentis, Robinson and Kloss, Journ. Fed. Malay States Mus. x. 1921, p. 204 (Renong).

Callolophus puniceus, A., p. 139 (Laynah and Bankasoon).

Chrysophlegma puniceus, C. ii, p. 44.

Gecinus puniceus, E., p. 101 (Patani).

Gecinus puniceus observandus, Hartert, Nov. Zool. iii, 1896, p. 542 (Sumatra).

Gecinus observandus, E., p. 46 (Trang).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 3 March 1919 (No. 4382, type).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

♂. Tasan, Chumporn, Peninsular Siam, 15-22 March 1919 (Nos. 4596, 4780).

"Iris red or reddish brown, orbits slate; upper mandible black, lower and the tomia yellow; feet green, sage green or olive brown."

Total length ♂, 261, 285; ♀, 231; wing ♂, 132, 136; ♀, 125; tail ♂, 97, 102; ♀, 98; tarsus ♂, 23, 26; ♀, 22.5; bill from gape ♂, 36, 32; ♀, 34 mm.

This subspecies is essentially an inhabitant of the damper evergreen forests throughout the Malay Peninsula.

271. *Chloropicoides rafflesi peninsularis* (Hesse).

Gauropicoides rafflesi, A., p. 146 (Bankasoon); C. ii, p. 42 (S. Tenasserim); E., p. 100 (Perak).

Gauropicoides rafflesi peninsularis, Hesse, Ornith. Monatsb. xix, 1911, p. 192 (Malacca); Stuart Baker, Ibis, 1919, p. 210; M., p. 426 (Tung Song).

♂. Tasan, Chumporn, Peninsular Siam, 29 March 1919 (No. 4921).

Wing, dry, 146 mm.; tail 122 (worn); bill from gape 40 mm.

Our material of this genus is not extensive; such as it is, it confirms the validity of Hesse's two subspecies from the mainland and Borneo. The present bird, like others from the Peninsula, has the mantle brighter golden yellow than Sumatran specimens; the rump is strongly flecked with scarlet.

Chloropicoides Malherbe, has priority by eleven years over the same author's *Gauropicoides*.

272. *Gecinulus viridis viridis* (Blyth).

Gecinulus viridis, Blyth, Journ. Asiat. Soc. Bengal, xxxi, 1862, p. 341 (Toung-hoo); H., p. 144 (Mergui and Pakchan); C. ii, p. 41; H., p. 95 (Bandon); K., p. 105 (East Siam).

2 ♂, ♀. Tapli, Pakchan Estuary, Peninsular Siam, 3-5 March 1919 (Nos. 4381, 4418, 4428).

♂. Tasan, Chumporn, Peninsular Siam, 17 March 1919 (No. 4641).

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

Baker, Journ. N.H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N.H. Soc. Siam, iv, 1920.

(third part).

"Iris hazel or deep brown; bill pale livid grey or whitish slate; feet greenish or greenish slate, claws grey."

Total length ♂, 260, 265, 260; ♀, 233; wing ♂, 127, 126, 127; ♀, 129; tail ♂, 103, 98, 110; ♀, —; tarsus ♂, 25, 26, —; ♀, 28; bill from gape ♂, 30, 29, 32; ♀, 29 mm.

This woodpecker is never found far from bamboo jungle, where it occurs in pairs or more rarely in parties of three or four.

***273. *Gecinulus viridis robinsoni* Kloss.**

Gecinulus viridis robinsoni, Kloss, Ibis, 1918, p. 105 (Ginting Bidei.

Selangor-Pahang boundary, 2000 ft.); L., p. 101 (Ghirbi).

Gecinulus viridis, Hume, Stray Feathers, ix, 1880, p. 112 (Kasoom).

The occurrence of this race in the Kingdom of Siam rests on the specimen from Ghirbi above quoted, and on another from Kasoom in the British Museum. Our bird is, of course, somewhat intermediate between the southern race and the typical form from North Tenasserim.

274. *Dryobates canicapillus canicapillus* (Blyth).

P(icus) canicapillus, Blyth, Journ. Asiat. Soc. Bengal, xiv, 1845, p. 197 (Aracan); C. ii, p. 36 (S. Tenasserim).

Yungipicus canicapillus, A., pp. 124, 500 (Tavoy to Malewoon).

Iyngipicus pumilus Hargitt, Ibis, 1881, p. 599 (South Tenasserim: Malewoon); id. op. cit. 1882, p. 39 (S. Tenasserim); id. Cat. Birds' B. M. xviii, 1890 p. 321 (Tavoy; Mergui; Malewoon; Kossoum); ? Salvad., Ann. Mus. Civ. Gen (2 a) vii, 1889 p. 432 (Malewoon); C. ii, p. 37 (Malewoon).

Iyngipicus canicapillus, E., p. 98 (Patani); F., p. 46 (Trang); H., p. 147 (Koh Samui).

♂. Tung Pran, Takuatung, Peninsular Siam, 13 February 1919 (No. 3985).

♂. Namchuk, Pakchan Estuary, Peninsular Siam, 25 February 1919 (No. 4240).

"Iris sienna or brown: bill greenish lead, culmen black or slaty black; feet plumbeous green or greenish slaty."

* We have not inserted this race in our key: it differs merely from the typical form in being slightly darker and in having the white spots on the inner webs of the primaries smaller.

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Inselalanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901. Vol. i.

E. O. Grant, Fasciuli Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Total length 137, 145; wing 84, 82; tail 43, 48; tarsus 13.5, 15; bill from gape 20.5, 20 mm.

Much commoner, as a rule, near the coast, especially among casuarinas, but also found inland.

We have followed Blanford, as has Gyldenstolpe (l. p. 93), in not maintaining *I. pumilus* Hargitt, even as a local race of this species, and Baker's remarks on the subject (Ibis, 1919, p. 192) are in accordance. Incidentally it may be pointed out that there is an unfortunate, though obvious, misprint in his passage. In the fourth line *picatus* should replace *auranteiventris*, which is a very distinct and perfectly good species: later on *auranteiventris* is misprinted *aurieiventris*.

The specimen from Namchuk has only one small spot on one median tail feather, while that from Tung Pran has four large spots on both.

It is not impossible that birds from Central and Southern Tenasserin, Siam and French Indo-China may ultimately prove separable from more northern Burmese and Assamese birds, which are typical *I. canicapillus* (type, Ramree Id., Aracan). In this case they would after all have to bear the name *I. pumilus* (type from Malewoon), though the characters may be other than those assigned to that race in the original description.

Comparison of the series of ten birds from the Northern Malay Peninsula, which may or may not be true *I. canicapillus*, show that the Southern Malay bird (21 specimens examined) is quite readily separable, and we have named it *I. c. suffusus* (Bull. B. O. C., xl, 1914, p. 14 (type from Kuala Lumpur).

275. *Dryobates analis longipennis* (Hesse).

Dendrocopos analis longipennis, Hesse, Orn. Monatsb. xx, 1912, p. 82 (Bangkok); id Mitt. Zool. Mus. Berlin, 86, 1912, p. 156 (Siam).

Picus pectoralis, Blyth, Journ. Asiat. Soc. Bengal, xv, 1846, p. 15 (Habitat unknown). Preoccupied by *Picus pectoralis* Latham, Ind. Orn. Suppl. 1801, p. 32.

Dryobates analis, Stresemann, Nov. Zool. xx, 1913, p. 349 (partim: Indo-China).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Dendrocopus pectoralis, Williamson, Journ. N. H. Soc. Siam, i, 1914, p. 45; id. op. cit. ii, 1917, p. 321 (Bangkok).

Dendrocopus analis, Robinson & Kloss, Ibis, 1919, p. 435 (S. Annam).

Dendrocopus pectoralis pectoralis, M., p. 424 (Bangkok).

♂, 2 ♀. Koh Lak, S. W. Siam, 9–10 April 1919 (Nos. 5215, 5219, 5220).

"Iris dark brown or reddish; bill slate, culmen dark; feet slate with a greenish tinge".

Total length ♂, 175; ♀, 178, 171; wing ♂, 100; ♀, 102, 100; tail ♂, 63; ♀, 62, 60; tarsus ♂, 17; ♀, 16.5, 16.5; bill from gape ♂, 25; ♀, 24, 23.5 mm.

These specimens certainly confirm Hesse's separation of the mainland form, inasmuch that they are all 100 mm. or over in wing measurement, while an Annam female is 100 and the type, from Bangkok, is 101 mm.

Birds collected by us in West Java measure 91–98 (16 ex.), Mid-Java 90–98 (5 ex.) and East Java 92–98 (10 ex.). No bird seems to have been recorded from Java with a wing longer than 98 mm., nor from Bali longer than 100 mm.

On the other hand, as Stresemann's measurements show (Nov. Zool. xx, p. 349), Burmese birds range from 93 to 104, Annam 102; Siam from 96 to 102 and Cochinchina from 92 to 101 mm.

In addition to attaining a greater maximum wing length, Indo-Chinese birds seem to have the black spots on the breast more pronounced than Sundanese examples.

276. *Blythipicus rubiginosus* (Swains.).

Hemicircus rubiginosus, Swainson, Birds of West Africa, ii, 1837, p. 150 (Malacca? Hartlaub).

Picus porphyromelas, Boie, News Staatsbürgerl. Mag. 1, 1832, p. 489 (Nomen nudum).

Picus melanogaster, Hay, Madras Journ. 1844, p. 153 (Malacca).

Venilia porphyromelas, F., p. 46 (Trang).

Blythipicus porphyromelas, M., p. 244 (Patiyu).

3 ♂, ♀. Tasan, Chumporn, Peninsular Siam, 14–26 March 1919 (Nos. 4592, 4642, 4857–8).

A. Hume, & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Inselalanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i. & ii 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

"Iris red; bill wax yellow, tinged with green at base; feet greenish slate."

Total length ♂, 218, 230, 231; ♀, 221; wing ♂, 124, 122, 123; ♀, 123; tail ♂, 82, 77, 79; ♀, 78; tarsus ♂, 24.5, 24, 23; bill from gape ♂, 36, 38, 38; ♀, 33 mm.

Strictly a bird of the evergreen forests.

Sumatran birds range from 113–122 mm. in length of wing.

***Blythipicus pyrrhotis* (Hodgs.).**

Picus pyrrhotis, Hodgs. Journ. Asiat. Soc. Bengal, vi, 1837, p. 108 (Nepal).

As this species occurs in North Tenasserim and North Siam, and has also been collected by us in the hills of the Malay States, it is almost certain to be found eventually in the intervening area.

277. *Meiglyptes tristis grammithorax* (Malh.).

Phaiopicus grammithorax, Malherbe, Picidae, ii, 1862, p. 12, pl. xlviii, figs. 4, 5 (Malay Peninsula).

Meiglyptes tristis (nec Horsf.). A., pp. 131, 501 (Nwalabo and Bankasoon); B., p. 72 (Puket or Junk Seylon).

Meiglyptes grammithorax, F., p. 46 (Trang); H., p. 95 (Bandon); Williamson, Journ. Nat. Hist. Soc. Siam, iii, 1918, p. 25 (Patani).

Meiglyptes tristis grammithorax, M., p. 422 (Tung Song and Patiya).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 2 March 1919

(No. 4347).

2 ♂, 4 ♀. Tasan, Chumporn, Peninsular Siam, 13–26 March 1919 (Nos. 4544, 4670, 4730, 4854–6).

"Iris red, more usually reddish brown; bill black; feet greenish slate."

Total length ♂, 178, 183, 178; ♀, 177, 177, 175, 175; wing ♂, 94, 100, 95; ♀, 96, 98, 98, 97; tail ♂, 55, 55, 58; ♀, 57, 55, 51, 53; tarsus ♂, 19, 18, 17; ♀, 19.5, 20, 18.5, 18; bill from gape ♂, 23.5 app., 24, 20; ♀, 21, 24, 22, 22 mm.

We can discover no difference between northern and southern Malay birds except that the southern birds are, as usual, slightly smaller: eight Sumatran birds range from 89–96 mm. in wing, and ten southern Malay birds 92–100 mm.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

Bornean birds are distinctly smaller (four specimens measure 85–91 mm.), and have been named by Hesse *M. t. micropterus*, Ornith. Monatsb. xix, 1911, p. 182. Oberholser has also named the Nias bird *M. grammithorax micropterus*, as resembling "*M. g. grammithorax*, but smaller." (Smiths. Misc. Coll. 60, No. 2, 1912, p. 6.). We do not know how it is to be distinguished from the Bornean bird, the name for which has priority.

It has by some authors been assumed that birds of this genus, and especially of this species, possess two phases of plumage, a greyer and a browner one. From an examination of our large series we are enabled to state, with some confidence, that this is largely a post mortem change, skins even when kept away from light gradually becoming buffier on their light area and more rufous brown in their dark parts. Freshly collected birds in fresh plumage have the light parts delicate creamy and the dark parts greyish black, the whole bird appearing as if washed over with very pale glaucous green or grey.

This also is an evergreen forest bird, common wherever it is found.

278. *Meiglyptes tukki tukki* (Less.).

Picus tukki, Less., Rev. Zool. 1839, p. 167 (Sumatra).

Hemicercus brunneus, Eyton, P. Z. S. 1839, p. 106 (Malacca).

Meiglyptes tukki, A., p. 132 (Bankasoon); C. ii, p. 61; D., p. 71 (Patani); E., p. 98 (Patani).

2 ♂, ♀. Tasan, Chumporn, Peninsular Siam, 16–26 March 1919 (Nos. 4633, 4805, 4853).

"Iris reddish brown; upper mandible black, lower pale greenish slate or greenish black: feet greenish yellow, greenish olive brown or greenish slate."

Total length ♂, 203, 208; ♀, 210; wing ♂, 101, 101; ♀, 101; tail ♂, 70, 64; ♀, 73; tarsus ♂, 21, 21; ♀, 21; bill from gape ♂, 28, 27; ♀, 28 mm.

These are the most northerly specimens hitherto recorded.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

We can perceive no difference between Sumatran, Bornean or Malayan birds either in size or colour.

279. *Micropternus brachyurus squamigularis* Sunde.

Picus squamigularis, Sundevall, Cons. Picin., 1866, p. 89 (Malacca).

Micropternus brachyurus, B., p. 72 (Junk Seylon); D., p. 72 (Patani); H., p. 95 (Bondon).

Micropternus phaiiceps, E., p. 99 (Patani); L., p. 102 (Ghirbi).

♀. Mamoh, Pakchan, Peninsular Siam, 27 February 1919 (No. 4280).

6 ♂, 2 ♀, 1 ♀ imm. Tasan, Chumporn, Peninsular Siam, 13-24 March 1919 [Nos. 4280, 4545, 4602, 4637, 4652, 4731, 4791, 4798, 4831, 4844].

"Iris hazel; bill black, base of lower mandible slate; feet brownish black."

Total length ♂, 237, 228, 236, 236, 230; ♀, 225, 241, 231; wing ♂, 120, 112, 118, 116, 112, 115; ♀, 118, 122, 117; tail ♂, 70, 70, 70, 67, 72, 70; ♀, 72, 68, 73; tarsus ♂, 22, 20.5, 20, 21, 23, 22; ♀, 22, 22, 26; bill from gape ♂, 28, 27.5, 28, 27, 28, 27.5; ♀, 28, 30, 28 mm.

The above are not typical *squamigularis*, but are best placed with that race. The black barring is much heavier than in the following subspecies and the throats are much darker.

280. *Micropternus brachyurus williamsoni* Kloss.

Micropternus brachyurus williamsoni, Kloss, Ibis, 1918, p. 107 (Koh Lak, S. W. Siam); M., p. 424 (Bangkok, Meklong); Baker, Ibis, 1919, p. 202.

Micropternus phaiiceps, A., pp. 145, 501 (Tavoy and Nwalabo).

Micropternus brachyurus, A., p. 145 (Mergui to the Pakchan); C. ii, p. 58 (Mergui to Malewoon); G., p. 149 (Rathburi or Petchaburi); M., p. 425 (Patiyu).

3 ♂, 2 ♀. Koh Lak, S. W. Siam, 2-7 April 1922 (Nos. 4931, 5059, 5109, 5146, 5183).

"Iris hazel; bill black, grey at base; feet brownish black."

Total length ♂, 232, 235, 248; ♀, 238, 238, wing ♂, 120, 118 (worn), 122; ♀, 116, 116; tail ♂, 67, 75 (worn) 68; ♀, 73, 67; tarsus

I. Gyldestolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

♂, 23, 22, 23; ♀, 23, 21: bill from gape ♂, 29, 29.5, 30; ♀, 27, 29 mm.

Apart from the southern Indian *M. b. gularis*, the Ceylon representative *M. b. lanka*, the transitional *M. b. mesos* from Orissa, the very distinct *M. b. badius* from Borneo, and the southern Chinese forms, which we do not propose to discuss, we regard the following forms, working from south to north (and disregarding Oberholser's "Barussan" birds, of which we have no material or description to base an opinion on), as probably sufficiently distinct to merit a name:—

(a). *Micropternus brachyurus brachyurus* (Vieill.).

Picus brachyurus, Nouv. Dict. d'Hist. Nat. xxv, 1818, p. 103 (Java).

We have one example only, but it confirms Hargitt's statement that "specimens from Java are larger than the Sumatran bird and have the feathers of the throat blacker with white margins" (Ibis, 1885, p. 12). These characters suffice to separate it from the following:—

(b). *Micropternus brachyurus badius* (Raffles).

Picus badius, Trans. Linn. Soc. xiii, 1822, p. 289 (Sumatra).

(c). *Micropternus brachyurus squamigularis* (Sundev.)

Picus squamigularis, Consp. Picin., 1866, p. 89 (Malacca).

Our south Malayan birds average lighter, more ochreous, less chestnut bay, than the seven Sumatran birds that we have examined; they may therefore be kept distinct under this name. Range, from the extreme south of the Peninsula northwards to about 9° N.

Between Bandon and Victoria Point birds, though very constant in their characters, *inter se*, are quite intermediate and defy even trinomial division (10 specimens examined). By the time we reach Koh Lak (Lat. 12° N.) the birds have become larger, black markings have diminished and the tail bars narrowed; these birds are:—

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

(d). *Micropternus brachyurus williamsoni* Kloss.

Micropternus brachyurus williamsoni, Ibis, 1918, p. 107 (Koh Lak, S. W. Siam).

This form probably ranges over the whole of South Tenasserim and S. W. Siam and grades into:—

(e). *Micropternus brachyurus burmanicus* Hume.

Micropternus burmanicus, Proc. Asiat. Soc. Bengal, 1872, p. 71 (Thayetmyo, Pegu).

Still larger, with markings more reduced.

This race probably occupies all Siam, north of Bangkok, N. Tenasserim and the Shan States, South and Central Burma, and possibly Arracan (wing 129 mm.). North of this area is found:—

(f). *Micropternus brachyurus phaeocephs* Blyth.

Micropternus phaeocephs, Journ. Asiat. Soc. Bengal, xiv, 1849, p. 195 (Neighbourhood of Calcutta 1).

This race is smaller on the whole than *burmanicus*, less immaculate, more rufous on the shafts of the primaries and tail feathers. Range—Bengal and Assam, meeting the preceding in the South and East: *M. brachyurus mesos* in the South-west: and in the North-west:—

(g). *Micropternus brachyurus blythi* (Malherbe).

Phaiopicos Blythii, Rev. & Mag. Zool. (2) i, 1849, p. 534 (Nepal).

Because authors have been unable, or have omitted, to refer directly to Malherbe's own writing, there has been a good deal of confusion about this race which, however, was cleared up by Hesse in 1912 (Mitt. Zool. Mus. Berlin, vi, 1912, p. 195 et seq.).

Malherbe first called the race *Picus rufinotus* in 1844, but gave no description: hence the name is invalid. In 1849 (*l. c. s.*) he described the bird and renamed it *Phaiopicus Blythii*: "dédiée au savant directeur du Muséum de Calcutta, habite le Nepaul..... Elle a été apportée par M. Hadgson" (Hodgson). Still later he withdrew *blythii* and again called the race *rufinotus* "Le *Phaiopicus rufinote*

1 The actual types of this form are a male and female collected by E. Blyth in 1844 in the neighbourhood of Calcutta.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

a été rapporté du Nepaul par M. Hodgson,.....J'avais en 1849 changé le nom que j'avais donné primitivement à cette espèce, pour la dédier à l'honorable directeur du Muséum à Calcutta : mais les observations réitérées qui m'ont été adressées à ce sujet, m'ont décidé à maintenir à regret le nom de *rufinotus* déjà inscrit dans les musées de l'Europe et dans plusieurs publications." (Monogr. Picid., Text II (1862) pp. 1-3, De 46, Figs. 1, 2). Meanwhile, in 1850, Bonaparte had recorded *Picus rufinotus* with a description (Cons. Gen. Av., p. 113: Central Asia—Specimen in the British Museum), but too late to save the name which ranks as a synonym of *P. blythii*.

In the Cat. Birds. Brit. Mus. xviii, p. 395, the type of *P. rufinotus* Mall., is stated to be a skin from Bengal. Baker writes (Ibis, 1919 p. 203) "The name *rufinotus* is a synonym of *gularis*. The specimen said to be the type is marked as having been taken by McClelland in Assam: in the B. M. catalogue it is said to come from Bengal, but the bird itself is a typical *gularis* from Southern India"! As shown, however, Nepal is the type locality of *Micropternus phaeocephalus blythii*, and the type is one of Hodgson's specimens in the Natural History Museum.

This is a larger race than *M. b. phaeocephalus*, getting larger from South-East to North-West.

(h). *Micropternus brachyurus humei* Kloss.

Micropternus brachyurus humei, Ibis 1918, p. 109 (Kumaon).

The most north-westerly and the largest form.

281. *Dinopium javanense javanense* (Ljung).

Picus javanensis, Ljungh, K., Vet. Ak. Nya Handl. xviii, 1797, p. 137 (Batavia, Java).

Chrysionotus javanensis, B., p. 64 (Puket or Junk Seylon).

Tiga javanensis, D., p. 72 (Patani); E., p. 99 (Patani); F., p. 47 (Trang); H., p. 95 (Bandon); Hesse, Mitt. Zool. Berlin, 6, 1912, p. 188 (critical).

Tiga javanensis javanensis, Stuart Baker, Ibis, 1919, p. 207 (critical); Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1917, p. 324 (Patani).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1892.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Dinopium javanense palmarum, Stresemann, Arch. f. Naturgesch. 87, 1921, p. 93 (Sumatra and Malacca).

2 ♂,* 2 ♀. Tung Pran, Takuatung, Peninsular Siam, 14 February 1919 (Nos. 3989, 3990*, 3991, 4011).

"Iris chestnut; bill slate, culmen black; feet plumbeous sage green."

Total length ♂, 271, 283*; ♀, 262, 270; wing ♂, 134, 141*; ♀, 133, 136; tail ♂, 103, 108*; ♀, 102, 110; tarsus ♂, 23, 23*; ♀, 22, 22; bill from gape ♂, 34, 34.5*; ♀, 33, 33 mm.

Dr. Stresemann has recently separated Sumatran birds from the typical Javan form on account of smaller size and named them *D. j. palmarum* (l. c. s.), giving the wing-length as 122–136 mm. 10 ex.). Hesse records 128–132 (4 ex.): Sumatran birds measured by us have wings 122–135 (19 ex.): on the other hand, Baker (Ibis, 1919, p. 206) records Sumatran measurements as 118–139 (8 ex.).

For Javan birds Stresemann has 131–140 (6 ex.). Hesse records specimens of 136.5 and 142.5: our series measures 126–137 (21 ex.) and Baker gives 124–138 (23 ex.).

Birds of the Malay Peninsula south of 10° lat. measure, according to Baker, 122–136 (31 ex.): our series has wings 125–141 (27 ex.).

To summarise these figures:—

Java, wings 124–142.5

Malay Peninsula, south of 10°, wings 122–141

Sumatra, wings 118–139.

There seem scarcely any grounds for separation in these dimensions: but we are not concerned for the moment with Sumatran birds. Stresemann has, however, associated Malayan birds (south of the Isthmus of Kra) with *D. j. palmarum*: but we cannot separate them from the typical Javanese form.

* No. 3990 (♂) is practically *D. javanense intermedia*.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

282. *Dinopium javanense intermedium* (Blyth).

Picus (Tiga) intermedius, Blyth, Journ. Asiat. Soc. Bengal, xiv, 1845, p. 193 (Aracan).

Tiga javanensis (part.), A., pp. 146, 501 (Nwalabo to Malewoon) : C. ii, p. 55.

Tiga javanensis intermedia, I., p. 95 (Koh Lak) ; K., p. 109 (Koh Lak) ; Stuart Baker, Ibis, 1919, p. 208 : Williamson, Journ. Nat. Hist. Soc. Siam, ii, 1917, p. 323 (Koh Lak).

Tiga intermedia, Salvad., Ann. Mus. Civ. Gen. (2) vii, 1889, p. 432 (Malewoon).

♂. Renong river, Peninsular Siam, 21 February 1919 (No. 4136).*

♀. Victoria Point, S. Tenasserim, 24 February 1919 (No. 4181).*

♂. Tapli, Chumporn, Peninsular Siam, 5 March 1919 (No. 4429).

2 ♂, 5 ♀. Koh Lak, S. W. Siam, 1-10 April 1919 (Nos. 4880, 4894, 5066, 5083, 5172, 5185, 5242).

"Iris chestnut, orbits slate; culmen black; feet greenish slate or pale plumbeous green".

Total length ♂, 280*, 280, 287, 282 : ♀, 275*, 274, 285, 283, 271, 275; wing ♂, 140*, 141, 141, 145 : ♀, 138*, 141, 142, 142, 142 : tail ♂, 105*, 98, 98, 112 : ♀, 108*, 108, 98, 102, 107, 110 : tarsus ♂, 23*, 24, 23, 23 : ♀, 24*, 23, 23, 23, 22 : bill from gape ♂, 34*, 35, 36, 36, ♀, 33.5*, 32.5, 35, 33, 32, 34 mm.

We are, on the question of the races of this woodpecker, in substantial agreement with the views of Baker (*l.c.s.*), though there are one or two points on which remarks may not be amiss.

As in so many instances, the area with which we are now dealing extends over both sides of a well defined faunal boundary. The specimens from Koh Lak in our collection are undoubtedly *D. j. intermedia*; while specimens from Bandon and Trang, south to Selangor, are just as clearly *D. j. javanense*. Birds from the Pakchan

*Nos. 4136 (♂) and 4181 (♀) are ranging towards *D. j. javanense*.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

Estuary are more nearly the former: while the series from Takua-tung is closest to the latter. The birds are therefore strictly in accordance with the geographical facts: their variation, as pointed out by Baker, is mainly a function of latitude. It is of interest to note that, when we get to Java and Bali, variation is a matter of longitude.

In Mr. Baker's paper referred to, Aracan is fixed as the type locality of *D. j. intermedia*, and with this also we agree; but for the sake of definiteness would further restrict it to Ramree Island, for the following reasons. The race was described in 1845 by Blyth, and in his Catalogue of Birds in the Museum of the Asiatic Society, Calcutta, p. 56, he listed seven specimens, viz.,

- 254 A. ♂, from Tenasserim (Rev. J. Barbe 1841).
 „ B. ♂, from Ramree Id., Aracan (Capt. J. R. Abbott, 1844).
 „ C. D. ♀ ♀, from Aracan (Capt. Phayre, 1844-5).
 „ E. ♂, } from Penang (Rev. L. Barbe, 1846).
 „ F. G. ♀ ♀, }

All these specimens are still extant, and have been examined by us. Nos. 254 E. F. and G. need not be considered: further, they were received after the race was described, and do not as a matter of fact belong to it: their wings measure, E. ♂ 132, F. ♀ 127, G. ♀ imm. 119.5 mm.

No. 254 A., male from Tenasserim, has a wing 144.5 mm. It probably came from the neighbourhood of Ye.

No. 254 B. has a wing of 144 mm., bill from gape 34; we select it as the ♂ type of the species.

No. 254 C. has a wing of 146 mm., bill from gape 33.5. We select this as the ♀ type of the species.

It should be noted that Blyth, in his capacity of Curator of the Museum of the Asiatic Society of Bengal, forwarded in 1844 and 1846 large collections of birds by several separate despatches to London, c.f. Horsfield and Moore (Cat. Birds Mus. East Ind. Co., vol. i.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).
 Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).
 M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.
 (third part).

1854, p. v). Amongst these was a male, locality unspecified, of *Tiga intermedia*, which is claimed by those authors as the type of the race [*op. cit.* ii, 1856-8, p. 658], and is also recorded as such by Hargitt (Cat. Birds Brit. Mus. xviii, 1890, p. 416, spm. *w*). There is no evidence, however, that this is the case, and in the absence of definite locality, it would be extremely inconvenient to regard it as such.

Finally, we think that the very large size of birds from the north of Burma would fully have justified the description of yet another subspecies. The Zoological Survey of India possesses a male from Yebok, South Shan States, collected by the late Col. Bingham on 15th December 1899, having a wing measurement of 153.5 mm. and bill from gape of 36 mm.

283. *Callolophus miniatus malaccensis* (Lath.).

Picus malaccensis, Latham, Ind. Orn. i, 1770, p. 241 (Malacca).

Chrysophlegma malaccensis, E., p. 100 (Patani); E., p. 46 (Trang);

H., p. 95 (Bandón).

Callolophus malaccensis, A., p. 140 partim (Bopvin to Malewoon);

B., p. 68 (Junk Seylon).

Callolophus miniatus malaccensis, L., p. 101 (Ghirbi and Puket).

♀. Tapli, Pakchan Estuary, Peninsular Siam, 2 March 1919 (No. 4346).

♀. Tasan, Chumporn, Peninsular Siam, 14 March 1919 (No. 4591).

♀. Khao Tong, 300 ft., Nakorn Sri Tamarat, Peninsular Siam, 20 February 1922.

"Iris red; upper mandible black, lower slate; feet greenish slate."

Total length 247, 262, —; wing 128, 127, 129; tail 88, 90, 92; tarsus 24, 23, 22; bill from gape 30, 28, 28 mm.

The transition from typical *C. m. malaccensis* to the northern form discussed below is, of course, gradual; but we consider the above birds nearest to the typical Malaccan race. All have the crest and mantle strongly barred.

A. Hume, & Davison, *Stray Feathers*, vi, 1878.

B. Müller, *Die Ornithologie der Inselalanga*, 1882.

C. Oates, *Birds Brit. Burmah*, Vols. i. & ii 1883.

D. Bonhote, *P. Z. S.* 1901, Vol. i.

E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.

H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

284. *Callolophus miniatus perlutus* Kloss.

Callolophus malaccensis, A., p. 140 partim (Tavoy to Tenasserim Town); C. ii, p. 47.

Chrysophlegma miniatum malaccense, Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916, p. 91 (Hat Sanuk).

Callolophus miniatus perlutus, Kloss, Ibis, 1918, p. 110 (Koh Lak); Stuart Baker*, Ibis, 1919, p. 193 (critical remarks).

Callolophus mineatus malaccensis, M., p. 423 (Patiyu).

2 ♂, vix ad. Hat Sanuk, Rajburi, S. W. Siam, 13-18 April 1919 (Nos. 5272, 5389).

"Iris red or vienna brown; upper mandible black, lower silvery slate; feet sage or plumbeous green."

Total length 263, 268; wing 136, 135; tail 98, 98; tarsus 25. 25; bill from gape 30, 33 mm.

Stuart Baker in some critical remarks on this race has laid down that it cannot be maintained; but his statements in support of his opinion are very generalised and the facts are against him. In the past the use of large scale charts has been urged by British politicians, and the advice is equally pertinent to modern day systematists. The political entity, Siam, covers fully 15 degrees of latitude, or a sixth of the earth's quadrant from pole to equator; it comprises districts with a rain-fall varying from 400 inches to 40, and with a range of temperature which may be 50 degrees or may not exceed 20. It is, therefore, surely unscientific to contend, because birds found in one district or area, which include in their descriptive data the word "Siam," do not agree in characters with another set in which this word is also included, that characters not found in both sets have no real existence and are not differential.

Mr. Baker's further contention that because a character or set of characters which are dominant in one locality occur in another area, therefore a subspecies founded on them is invalid, strikes at the whole modern conception of subspecies. Nature proceeds in the

* Spelt *perlutus*.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

main by a method of trial and error, and variations which prove to be better adapted than others to the environment become dominant in that environment; it does not necessarily follow that that variation which is dominant in one locality, and has, therefore, acquired subspecific distinction, may not more or less frequently occur in other localities and environment where, however, it is more or less rapidly suppressed.

Incidentally it may be remarked that Mr. Baker, as evidenced by his work on the Dieruridae, and on the woodpeckers as noted above, is a great believer in average. His average is merely the arithmetic mean and, therefore, assumes that his curve of variability is symmetrical in all cases, which is extremely improbable. It would be far better if he would plot his dimensions and give us the median. In the particular case of this woodpecker, he can be safely challenged to plot the lengths on a base line of latitude and then state that increase of wing-length is not definitely associated with increase of latitude. It is probable, of course, that another factor may tend to obscure the result, as birds inhabiting higher altitudes are usually larger than those from near sea-level.

In regard to our present series, four birds have had exact data recorded, all from the immediate vicinity of Koh Lak. Their wing measurements are 140, 139, 135, 136 mm., while one from Bandon measures 135 mm.

Nineteen birds from various localities from the Pakehan Estuary to North Johore range from 122–133 mm. in length of wing, five being 130 or over: of these five, four are from altitudes of 2000 feet and over, while of the remaining fourteen, four only are from the hills. Four birds from Borneo measure 120–123 mm. (*C. m. dayak* Stresemann).

Eleven birds from Sumatra measure 116–132 mm., of which one only is over 130, while that with a wing of 116 is worn.

A. Hume & Davison, *Stray Feathers*, vi, 1878.
 B. Müller, *Die Ornithologie der Insel Salanga*, 1882.
 C. Oates, *Birds Brit. Burmah*, Vols. i & ii, 1883.
 D. Bonhote, *P. Z. S.* 1901, Vol. i.

E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.
 F. Robinson and Kloss, *Ibis*, 1910-11.
 G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.
 H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

We think, then, that in face of these figures it must be contended that the birds of the species inhabiting the area north of about 10° N. are larger birds, and that birds of high elevations are also larger.

As regards colour :

(a) Two out of the four northern birds available for examination have the yellow crest unbarred.

Two out of twenty of the southern birds have the yellow crest unbarred.

(b) Interseapulum strongly barred in three out of four northern birds. Interseapulum uniform or slightly spotted in fourteen out of twenty one southern birds: barred more or less strongly in the remaining seven.

This difference is also noted by Hume and Davison, *op. cit. supra*.

Northern birds have generally the pale interspaces on the undersurface broader and paler than in southern birds, but the character cannot be fully relied on as some southern birds have it. We think, therefore, that *C. m. perlutus* can fairly be maintained as a northern local race which, however, is not found south of about 10° 30', as Chumporn and Pakchan birds are, on the whole, to be referred to *C. m. malaccensis*.

[A pair from Bangtaphan, S. W. Siam, lent by Mr. Williamson are also *C. m. perlutus*. Wings, 135, 136; bill from gape 32, 30 mm. Interseapulum strongly barred; one with yellow crest unbarred, one barred; underparts with pale bars broad].

285. *Chrysophlegma mentale humii* Hargitt.

Callolophus mentalis (nec. Temm.), A., p. 138 (Bankasoon); C. ii, p. 46.

Chrysophlegma humii, Hargitt, Ibis, 1889, p. 231 (♂, Malacca; ♀, Klang); E., p. 100 (Patani); F., p. 46 (Trang); H., p. 95 (Bandon), M., p. 423 (Tung Song).

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|---|---|
| I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916. | M. Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| J. Robinson, Journ. F. M. S. Mus. vii, 1917. | (first part). |
| K. Kloss, Ibis, 1918. | Baker, Journ. N. H. Soc. Siam, iii, 1919. |
| L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919. | (second part). |
| | M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. |
| | (third part). |

♀. "Iris brown-hazel; upper mandible plumbeous green, lower greenish horn; feet greenish."

The bird is rare in the north and only just reaches British India at Bankasoon, Tenasserim.

286. *Chrysophlegma flavinucha lylei* Kloss.

Chrysophlegma flavinucha lylei, Kloss, Ibis, 1918, p. 110 (Koh Lak); id, Journ. Nat. Hist. Soc. Siam, iv, 1921 p. 52; Stuart Baker, Ibis, 1919, pp. 192-3 (critical remarks).

Chrysophlegma flavinucha pierrei (partim), M., p. 423 (Koh Lak).

4 ♂ ad., 1 ♀ vix ad., 1 ♀ juv. Hat Sanuk, nr. Koh Lak, Rajaburi, S. W. Siam, 12-18 April 1919 (Nos. 5250-1, 5254, 5372, 5387-8).

Male adult, "Iris red, orbits sage; bill greenish ivory, whitish at tip; feet greenish slate." Female. "Iris red, orbits dark sage; bill greenish ivory, paler at tip; feet greenish slate."

Total length ♂, 322, 336, 355, 317; ♀, 328; wing ♂, 167, 160, 159, 158; ♀, 156; tail ♂, 125, 137, 123, 128; ♀, 127; tarsus, ♂, 26, 26, 29, 27; ♀, 25; bill from gape ♂, 43, 42, 47, 39; ♀, 40 (app.) mm.

The four males agree well with the type, especially in the amount and tint of the yellow on the throat: the area immediately beneath the stripes on the throat is, however, darker, and the white edgings creating the striped effect are narrower: in one specimen the lores are almost uniform with the forehead, having hardly any white.

The not quite adult female differs from the male in having the malar stripes and chin rufous, not pale yellow; and in having the lores and ocular region more extensively mottled with white.

Mr. Baker (*loc. cit.*) has gone badly astray in considering these birds as identical with *pierrei*, of which we have now a large series, including actual topotypes. Those differ in being on the whole even paler below than our Koh Lak birds: the yellow malar stripes are more restricted and so is that colour on the chin. Even in quite adult birds the white edgings to the black feathers of the throat are narrower and mixed with rufous, which is quite absent in *Ch. f. lylei*. The colour of the bill, which is important in woodpeckers, also confirms the distinction.

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornithologie der Insel Sülanka, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

As regards dimensions, the above series agree well with the type, though it should be noted that its tail is only partially grown, and, therefore, unduly short. It will be seen, however, that one of our birds has a wing of 167 mm., which falls very little short of the upper limit for Himalayan birds, a male from Darjiling measuring 169 mm. and one from the Abor Hills, collected by S. W. Kemp, 170 mm.

If the race is to be maintained, and it seems fairly entitled to rank as a subspecies, it will rest on its somewhat pale colouration above and below, especially on the flanks.

The species was fairly common at Hat Sanuk along the course of the little stream which was flanked by extremely large fig trees. The birds were very wild, flew very high and were therefore hard to get. They were very noisy, uttering the usual penetrating woodpecker shriek.

Stuart Baker has put forward the suggestion that *C. f. pierrei* Oust., and *C. f. wrayi* from the mountains of Selangor and Perak, may possibly prove to be one and the same. We can assure him that they are two different birds. To begin with, *C. f. pierrei* is decidedly larger, the wings of adult males averaging about 155 mm., with females almost the same; while *C. f. wrayi* has a wing of 147 mm. in males and 142 in females. In the second place, *C. f. wrayi* is a very much darker bird, the yellow malar patches in the male much restricted and not extending across the chin, the stripes on the throat in adult birds almost non-existent, and the yellow nuchal crest much shorter and paler in colour: the bill, again, is different in colour, being recorded as "bluish lead, greener in the lower mandible," or "slate colour"; whereas in *C. f. pierrei* it is "maxilla black, sides of base grey; mandible grey, tip and edges black."

A readily understandable misprint requires correction, as liable to cause confusion in the future. S. Baker records a female *wrayi* from Salanga which is a synonym of the island of Puket, Tongka, or

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Junk Seylon, off the west coast of Peninsular Siam. With the exception of the specimen obtained by the Skeat Expedition on Gunong Inas in North Perak, which is the most northerly record, all known specimens of this woodpecker in Europe or elsewhere have been sent home by the F. M. S. Museums. We have never obtained *Ch. f. arayi* in *Salanga*, or within 300 miles of it, and the citation is obviously a misprint for *Selangor*, in the mountains of which State the bird is fairly common.

Without wishing too frequently to belabour the matter of Mr. Baker's geographical inexactitudes (*Ibis*, 1919, p. 193), they being rather his misfortune than his fault, since owing to special circumstances he had to depend on labels written by a native collector, it must be noted, in the interests of correctness, that Chan Tuek (Chanteuk) and Pakchan or Pakjan (Pak Jong or Pak Chong) are not in the same part of Siam as Koh Lak, whence the type of *C. f. lylei* was procured: the latter is in S. W. Siam, not far south-east of Mergui: both the former are in the range of hills between Saraburi and Korat, which separate the basins of the Menam and Mekong. Birds from this district are undoubtedly *pierrei*, as had been previously stated by one of us, the range of which in Southern Siam is probably bounded westward by the Menam: those from S. W. Siam are, just as undoubtedly, not that bird.

287. *Chrysocolaptes guttacristatus guttacristatus* (Tick.).

Picus guttacristatus, Tickell, Journ. Asiat. Soc. Bengal, ii, 1833, p. 578 (Borabhum).

Chrysocolaptes sultaneus, A., p. 133 (Mergui to Bankasoon).

Chrysocolaptes strictus (nec. Horsf.), C. ii, p. 53.

Indopicus strictus, B., p. 61 (Puket or Junk Seylon).

Chrysocolaptes guttacristatus, E., p. 99 (Patani): F., p. 47 (Trang); H., p. 147 (Koh Samui, Bandon Bight).

Chrysocolaptes guttacristatus indo-malayicus, Hesse, Ornith. Monatsb. xix, 1911, p. 182 (Junk Seylon); Gyldenstolpe, Konigl. Svenska Vetensk. Akad. Handl. 50, No. 8, 1913, p. 49 (Central Siam): Robinson, *Ibis*, 1915, p. 739 (S. E. Siam): J., p. 161 (Perutau).

Chrysocolaptes strictus guttacristatus, K., p. 111 (E. Siam).

A. Hume & Davison, *Stray Feathers*, vi, 1878.

B. Müller, *Die Ornith. der Insel Salanga*, 1882.

C. Oates, *Birds Brit. Burmah*, Vols. i & ii, 1883.

D. Bonhote, *P. Z. S.* 1901, Vol. i.

E. O. Grant, *Fasciuli Malayenses*, iii (Birds), 1915.

F. Robinson and Kloss, *Ibis*, 1910-11.

G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.

H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

Chrysocolaptes guttieristatus guttieristatus, L., p. 95 (North Siam); L., p. 102 (Ghirbi and Puket).

Chrysocolaptes guttieristatus delesserti (part.), Stuart Baker, Ibis, 1919, p. 197 (critical); M., p. 424 (Patiyu).

♂. Koh Yam Yai (Sugar loaves), Peninsular Siam, 18 February 1919 (No. 4113).

♀. Renong river, Peninsular Siam, 22 February 1919 (No. 4165).

2 ♂, ♀. Tapli, Pakehan Estuary, Peninsular Siam, 7 March 1919 (Nos. 4486, 4513, 4520).

♂. Tasan, Chumporn, Peninsular Siam, 26 March 1919 (No. 4869).

2 ♂, ♀. Koh Lak, Rajburi, S. W. Siam, 8-9 April 1919 (Nos. 5171, 5186, 5202).

2 ♂, 2 ♂ imm., 2 ♀ vix ad. Hat Sanuk, Rajaburi, S. W. Siam, 14-17 April 1919 (Nos. 5290, 5327-9, 5361-2).

Total length ♂ 308, 305, 320, 322, 293, 305, 300, 295, 288 mm.

Wing 159, 157, 154, 165, 160, 163, 164, 159, 158 mm.

Tail 107, 80, 90, 110, 96, 95, 103, 96, 93 mm.

Tarsus 29, 30, 30, 32, 30, 29, 30, 29, 29 mm.

Bill from gape 52, 55, 54, 54, 48, 53, 52, 48 49.5 mm.

Total length ♀, 303, 313, 310, 285, 288 mm.

Wing 162, 161, 168, 156, 154 mm.

Tail 98, 104, 103, 90, 95 mm.

Tarsus 26, 29, 29, 29, 28 mm.

Bill from gape 48, 52, 52, 48, 47 mm.

"Iris light red, reddish orange, sometimes yellow, orbits slate; bill greyish black; feet greenish slate."

We have again gone through our very considerable series of this bird and have also examined the whole of the series in the

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part). Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Indian Museum, Calcutta (Zool. Survey of India), and can recognise the following continental forms:—

(a). *Chrysocolaptes guttacristatus sultaneus* (Hodgs.).

A large bird with a very large bill, wing 168 mm. and upwards.

Range. Himalayas and Himalayan foot-hills, eastwards to Northern Burma (specimen from Bhamo, wing 180 mm.).

(b). *Chrysocolaptes guttacristatus guttacristatus* (Tick.).

A medium sized bird, wing 155–165 mm.

Range. Bengal, Orissa south to Godavery, Assam, Aracan, the whole of Burma, Siam, Cochin-China, Malay Peninsula south to Patani: possibly Sumatra, where a form of the species is known to occur.

(c). *Chrysocolaptes guttacristatus delessertii* (Malh.).

A small bird, wing not exceeding about 155 mm., more deeply and more richly coloured than other forms.

Range. India, south of the Godavery, and Western India to the Konkan, where two specimens collected by Dr. Armstrong in April 1878 measure 156 and 149 mm. respectively.

(d). *Chrysocolaptes guttacristatus chersonesus* Kloss.

A small bird, even smaller than *C. g. delessertii*, wing from 142–150 mm., with a correspondingly shorter bill and less bright colouration.

Range. Johore, Singapore, Rhio Archipelago and Sumatra.

We are in fair agreement with Mr. Baker's discussion of the species, but we cannot admit that the south Indian and south Malayan birds are identical, separated as they are by the intervening subspecies *S. g. guttacristatus*. The southernmost known specimen of *C. g. guttacristatus* is a female collected by Robinson at Biserat, Jalor, in Pattani on June 29th 1901. South of that, until we reach the extreme south of Johore, the bird has never been met with, though the area has probably been as well collected over as any

A. Hume, & Davison, *Stray Feathers*, vi, 1878.

B. Müller, *Die Ornithologie der Inseln Malakka*, 1882.

C. Oates, *Birds Brit. Burmah*, Vols. i. & ii 1883.

D. Bonhote, *P. Z. S.* 1901, Vol. i.

E. O. Grant, *Fasciculi Malayenses*, iii (Birds), 1905.

F. Robinson and Kloss, *This*, 1910-11.

G. Gairdner, *Journ. N. H. Soc. Siam*, i, 1915.

H. Robinson, *Journ. F. M. S. Museums*, v, 1915.

similar extent of country in Asia. Besides Singapore and the extreme southern point of Johore, we have collected *C. g. chersonesus* at Bliah, Kundur, one of the Rhio archipelago, and the specimens are now in the Tring Museum: it has also been taken at least twice in Sumatra. It is incredible that there are (as Mr. Baker states) specimens from Johore in the British Museum with wings exceeding 170 mm. There were no specimens at all from Johore in the Museum when the Catalogue was compiled in 1892, nor when one of us searched the collection in 1920, and we cannot but think that some mistake has been made in reading the labels.

288. *Chrysocolaptes validus xanthopygius* Finsch.

Chrysocolaptes xanthopygius, Finsch, Notes Leyden Museum, xxvi, 1905, p. 34 (Upper Mahakam river, Dutch Borneo).

Chrysocolaptes validus, F., p. 47 (Trang).

Chrysocolaptes validus xanthopygius, Robinson and Kloss, Journ. Fed. Malay States Mus. viii, pt. 2, 1918, p. 148 (Sumatra).

The Bornean, Sumatran, and Malay Peninsula birds differ at a glance from the typical Javan form in having the back and rump orange, flicked with flame colour, not deep crimson.

A male from Lamra, collected on 22nd February 1910, a female from Koh Khau, on January 7th 1910, a male from Chong, 24th December 1910, and a pair from Khao Ram, 1000 ft., Nakon Sri Tamarat, 23rd February 1912, are the sole records for Siam; the bird is not found at all within British Indian limits.

289. *Hemicircus concretus sordidus* (Eyton).

Dendropicus sordidus, Eyton, Ann. and Mag. Nat. Hist. xvi, 1845, p. 229 (Malacca),

Hemicircus sordidus, A., p. 128 (Bankasoon); F., p. 47 (Trang).

A single female shot at Chong, Trang, on 8th December 1909, and a male from Khao Ram, 1200 ft., Nakon Sri Tamarat, 26th February 1922, constitute the records for Siam: a male from Bankasoon, S. Tenasserim, is the sole record for British India.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam. iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

Our two Peninsular Siam birds differ in no way from southern Malayan specimens of which the wing-lengths range from 81 to 89 mm. Sumatran birds, wings 81–84.5, do not seem to attain the size of the mainland ones: they have been named *H. coccomelopus* by Reichenbach (1854). Bornean birds, of which we have only a pair, wings 79–81, also seem smaller: but, like Sumatran examples, do not differ otherwise. They should be placed with the latter apparently: though if comparison of large series discloses differences, the name *H. brookeanus* Salvad. (1868: Borneo) is available. No value attaches to the tint of the pale parts (cf. Hesse, Mitth. Zool. Mus. Berlin, vi, 1912, pp. 151–153).

290. *Hemicircus canente canente* (Less.).

Picus canente, Less., Cent. Zool., p. 215, pl. xxiii, ♂, 1830 (Pegu).

Hemicircus canente, A., p. 127 (Tavoy to Bankasoon): C. ii, p. 30;

Hume, Stray Feathers, ix, 1880, p. 112 (Kasoom).

2 ♀. Tapli, Pakchan Estuary, Peninsular Siam, 2–7 March 1910 (Nos. 4338, 4467).

“Iris reddish or brown; bill black or dark greenish.”

Total length 149, 143; wing 93, 91; tail 40, 40; tarsus 16, 16; bill from gape 21, 22 mm.

These specimens, and the one obtained by Darling at Kasoom, are the only records for Peninsular Siam.

291. *Mülleripicus pulverulentus harterti* (Hesse).

Mülleripicus pulverulentus harterti, Hesse, Ornith. Monatsb. xix, 1912, p. 182; id. Mittheil. Zool. Mus. Berlin, vi, 1912, pp. 231, 232 (Pya, Upper Chindwin); L., p. 96 (North Siam).

Mülleripicus pulverulentus, A., p. 133 (Pakchan; Bankasoon; Malewoon).

Alophonerpes pulverulentus, C. ii, p. 29; F., p. 47 (1911); H., p. 95 (Bandon); J., p. 163 (Pulau Lontar and Terutap).

Alophonerpes pulverulentus harterti, Robinson and Kloss, Ibis, 1919, p. 439 (Cochin-China and Annam).

Hemilophus pulverulentus harterti, M., p. 426 (Tung Song and Patiyu).

♀ ad. Hat Sanuk, Rajburi, S. W. Siam, 12 April 1919 (No. 5255).

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S., 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910–11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

"Iris blackish brown; bill pale whitish slate, culmen dark; feet bluish slate."

Total length 485; wing 239; tail 187; tarsus 37; bill from gape 68 mm.

It is unprofitable to discuss the races of this woodpecker until a series from Java is available for comparison. In the meantime we use this name for all the continental birds. The Bornean race, apparently distinct from the present one, has already a name, *M. mülleri* (Bp., Consp. Av. 1, p. 131, 1850), and it is therefore improbable that any mainland form is identical with the Javan one.

Young birds have the bill pale throughout and the throat and foreneck cream. A first year male from Bandon has the forehead washed with red and the foreneck slightly tinged with the same colour.

292. *Thriponax javensis javensis* (Horsf.).

Picus javensis, Horsfield, Trans. Linn. Soc. xiii, 1821, p. 175 (Java).

Picus macinotus malagensis, Bland, Journ. Asiat. Soc. Bengal, vi, 1837, p. 952 (Johore).

Thriponax javensis, A., p. 135 (Laynah to Malewoon); C. ii, p. 27;

B., p. 72 (Junk Seylon or Puket); F., p. 47 (Trang); Hargitt,

Ibis, 1885, p. 148 (Malewoon).

The Trang example (a female shot at Chong on 11th December 1909, wing 222 mm.) is interesting, having a few of the feathers of the rump faintly tipped with white, while Hargitt (Cat. Birds Brit. Mus. xviii, p. 499) records an adult from Malewoon having the rump feathers white with a subterminal band of black. Both birds, of course, show the commencement of gradation to *T. j. feddeni*.

293. *Thriponax javensis feddeni* (Blanford).

Mülleripicus feddeni, Blandford, Journ. Asiat. Soc. Bengal, xxxii, 1863, p. 75 (Burma, probably Ava); Hargitt, Ibis, 1885, p. 154

(Petchaburi).

Thriponax javensis feddeni, Stresemann, Nov. Zool. xx, 1913, p. 321; L., p. 95 (North Siam).

♀ ad. Koh Lak, Rajburi, S. W. Siam, 9 April 1919 (No. 5187).

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, Ibis, 1918.

L. Robinson and Kloss, Journ. N.H. Soc. Siam. iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N.H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

"Iris pale yellow; bill black; feet greenish grey."

Total length 417; wing 216; tail 175; tarsus 30; bill from gape 53 mm.

The present bird is slightly larger than specimens from Cochin-China and Annam, with which we have compared it. It has practically no trace of white tips to the primaries.

The present record is a considerable extension of range for the species, the nearest localities where it has been taken being Petchaburi (C. Bock) and Meklong (H. C. V. Hunter), *vide* Cat. Birds Brit. Mus. xviii, p. 505.

Picumnus innominatus malayorum Hartert.

Picumnus innominatus malayorum, Hartert, Vogel palaurkt. Fauna, 1912, p. 937 (Perak).

Picumnus innominatus, Hargitt, Cat. Birds Brit. Mus. xviii, p. 549 (Thoungyeen river, Tenasserim).

This species is recorded from Tenasserim, as above, while we have it also from Annam and from the Malay States: it is therefore highly probable that it will be met with eventually in the northern half of the Peninsula.

294. *Sasia abnormis abnormis* (Temm.).

Picumnus abnormis, Temminck, Pl. Col. No. 371, fig. 3 (1825) Java. *Sasia abnormis*, E., p. 97 (Patani); F., p. 48 (Trang); H., p. 96 (Bandon).

Sasia abnormis everetti, L., p. 102 (Ghirbi).

Sasia abnormis abnormis, Baker, Ibis, 1919, p. 21 (Maprit in Patiyu); M., p. 427 (Tung Song and Patiyu).

We have this species recorded from Patani, Trang, Ghirbi and Bandon, while Baker states that it occurs in Herbert's collection from Maprit, S. W. Siam, so that the ranges of the two species, *S. ochracea* and *S. abnormis*, slightly overlap.

295. *Sasia ochracea reichenowi* Hesse.

Sasia ochracea reichenowi, Hesse, Ornith. Monatsb. xix, 1911, p. 181 (Burma); id. Mitth. Zool. Mus. Berlin, vi, 1912, p. 145 (type locality, Tavoy); L., p. 97 (North Siam); Baker, Ibis, 1919, p. 211 (Mergui); K., p. 113 (Lat Bua Kao, E. Siam).

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornith. der Insel Salunga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

♀. Mamoh, Pakchan Estuary, Peninsular Siam, 26 February 1919 (No. 4276).

♂. Tapli, Pakchan Estuary, Peninsular Siam, 5 March 1919 (No. 4443).

2 ♂, ♀. Tasan, Chuaiporn, Peninsular Siam, 15-24 March 1919 (Nos. 4597, 4797, 4846).

"Iris red or reddish, orbits black, blackish red, dark slate or slate; upper mandible black, lower pale grey or slate, in one case yellow; feet yellow, orange or gamboge."

Total length ♂, 87, 83; ♀, 90, 84; wing ♂, 51, 53; ♀, 54, 55; tail ♂, 24, 24; ♀, 24, 28; tarsus ♂, 12, 13; ♀, 11.5, 13; bill from gape ♂, 16, 14; ♀, 13, 14 mm.

The series detailed above appears to agree well with the diagnosis of the race, which is a paler and brighter form of the typical Nepalese bird, though both forms, according to the describer, are found together in North Cachar. It is unfortunate that, while dealing with the genus critically, Baker has not investigated the status of *S. lacrymosa* Lafresnaye, a name revived by Hesse (*loc. cit. supra*) for a large form from the N. W. Himalayas with a wing 58 mm. and other differences.

It is perhaps worthy of note that our series listed above appears to have darker orbits than other birds of the same race, as recorded by Davison, Gyldenstolpe and Kloss.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F.M.S. Mus. vii, 1917.

K. Kloss, *ibid.*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

EURYLÆMIDÆ.

BROADBILLS.

1	{ Nostrils concealed by feathers	<i>Calyptomena viridis continentis</i>	
	{ Nostrils exposed .. ..	.. ..	2
2	{ Tail longer than wing	<i>Psarismus dalhousiae</i>	
	{ Tail shorter than wing .. ..	.. ..	3
3	{ Scapulars lemon-yellow .. ..	.. ..	4
	{ No yellow on wings .. ..	.. ..	5
4	{ Throat black, fore-neck white, a white collar	<i>Eurylaimus o. ochromatus</i>	
	{ Throat and fore-neck greyish vinous, no white collar	<i>E. javanicus harterti</i>	
5	{ Head black .. ..	.. ..	6
	{ Head not black .. ..	.. ..	7
6	{ A black band on breast	<i>Cymborhynchus n. malaccensis</i>	
	{ No black band on breast	<i>Corydon sumatranus</i>	
7	{ Tertiaries and secondaries paler, ear-coverts more fulvous	<i>Serilophus l. lunatus</i>	
	{ Tertiaries and secondaries darker, ear-coverts more drabby	<i>S. l. stolidus.</i>	

296. *Calyptomena viridis continentis* Rob. and Kloss.

Calyptomena viridis continentis, Robinson and Kloss, Journ. Fed. Malay States Mus. xi, 1923, p. 54 (Isthmus of Kra.).

Calyptomena viridis, A., pp. 86, 409 (Amherst to Malewoon); B., p. 41 (Junk Seylon); C. i, p. 422; E., p. 56 (Patani); F., p. 50 (Trang); H., p. 96 (Bandon); I., p., 85 (Hat Sanuk); L., p., 103 (Junk Seylon); M., p. 419 (Tung Song).

♂, Koh Rah, Takuapah, Peninsular Siam, 17 February 1919 (No. 4055).

♀, Tapli, Pakchan Estuary, Peninsular Siam, 5 March 1913 (No. 4430).

♂, 4 ♀. Tasan, Chumpon, Peninsular Siam, 13–15 March 1919 (Nos. 4561, 4568, 4570, 4581, 4598).

“Iris dark; bill sage green, culmen black; feet green.”

Total length ♂, 177, 177; ♀, 197, 192, 197, 185, 198; wing ♂, 106, 100; ♀, 112, 108, 111, 103, 109; tail ♂, 50, 53; ♀, 65, 58, 60, 60, 66; tarsus ♂, 22, 21; ♀, 23, 21, 21.5, 22, 22; bill from gape ♂, 24, 25; ♀,—, 25, 25, 27, 25, mm.

Though this bird, which is distinguished from the typical Sumatran form by the attainment of greater size, has been obtained

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornis der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1915.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. F. M. S. Museums, v, 1915.

as far north as Amherst in Tenasserim, it has not been recorded from Siam north of Hat Sanuk. In Bandon we found it breeding in June. We have it from Khao Ram, 1200 ft., and Khao Luang, 2000 ft., in Nakon Sri Tamarat. Females seem to run a little larger than males.

***Psarisomus dalhousiæ dalhousiæ* (Jameson).**

Eurylaimus dalhousiæ, Jameson, Edinb. N. Ph. Journ., xviii, 1835, p. 389 (North India).

Psarisomus dalhousiæ, A., p. 499 (Nwalabo).

Though not yet recorded from any locality in the area now dealt with, this bird occurs on Nwalabo, at a height of 3000 ft., and is certain to be secured eventually in the mountains, as it is well known in the Malay States.

297. *Eurylaimus ochromalus ochromalus* Raffles.

Eurylaemus ochromelas, Raffles*, Trans. Linn. Soc. xiii, 1822, p. 297 (Sumatra); A., p. 91 (Laynah to Malewoon); B., p. 42 (Tongkah or Puket); C. i, p. 426; F., p. 50 (Trang); H., p. 97 (Bandon); M., p. 418 (Tung Song).

♀, Tapli, Pakehan Estuary, Peninsular Siam, 3 March 1919 (No. 4390).

♀, Tasan, Chumporn, Peninsular Siam, 14 March 1919 (No. 4583).

"Iris chrome; bill robin's-egg blue, tip of upper mandible green, tomia black; feet pinkish or purplish flesh."

Total length 167, 160; wing 78, 78; tail 48, 55; tarsus 20.5, 20.5; bill from gape 27, 27 mm.

On the Tenasserim side this species reaches its northern limit at Ye, in about Lat. 15° N. In Peninsular Siam the above specimens are the most northerly recorded.

298. *Eurylaimus javanicus harterti* Van Oort.

Eurylaemus javanicus harterti, Van Oort, Notes Leyden Museum, xxxi, 1909, p. 209 (Sumatra).

Eurylaemus javanicus, A., p. 89 (Nwalabo to Bankasoon); C. i, p. 427; H., p. 96 (Bandon).

* Spelt as above by this author.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919. (first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919. (second part)

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920. (third part).

The Sumatran bird, with which the majority of Malayan specimens agree, has been separated from the typical Javan bird, which has yellow under tail-coverts, these being vinaceous in the present form. It is not impossible, however, that the bird from the Lampongs District, South Sumatra, adjacent to the Sunda Straits, belongs to the Javan form.

Though found in the Karen Hills and North Siam, the three specimens from Bandon recorded above, and a pair from Khao Luang, 2000 ft., Nakon Sri Tamarat, 14th March 1922, are the only ones hitherto obtained from Peninsular Siam, where, however, it must be fairly common. The two males now before us differ from a long series of Malayan and Sumatran birds in being paler both above and below.

299. *Corydon sumatranus sumatranus* (Raffles).

Coracias sumatranus, Raffles, Trans. Linn. Soc. xiii, 1822, p. 303 (Sumatra).

Corydon sumatranus, A., p. 97 (Bankasoon and Malewoon); C. i, p. 430; B., p. 43 (Tongkah or Puket); G., p. 149 (Ratburi); L., p. 87 (Koh Lak); L., p. 103 (Puket).

♂, ♀. Tung Pran, Takuatung, Peninsular Siam, 14 February 1919 (Nos. 4017, 4018).

3 ♀. Tasan, Chumporn, Peninsular Siam, 13-22 March 1919 (Nos. 4562, 4753, 4787).

2 ♂. Hat Sanuk, Rajburi, Peninsular Siam, 16 April 1919 (Nos. 5341-2).

"Iris dark hazel or black; bill and orbits pinkish horn; feet black or brownish black."

Total length ♂, 271, 278, 272; ♀, 270, 272, 266, 272; wing ♂, 134, 138, 132; ♀, 131, 129, 135, 136; tail ♂, 98, 105, 105; ♀, 98, 102, 109, 103; tarsus ♂, 26, 27.5, 26; ♀, 26, 28, 28, 28; bill from gape ♂, 41, 40, 38; ♀, 42, 40, 39, 39 mm.

Continental and Sumatran birds do not differ. Bornean birds have the general colour dark sepia brown instead of dull black, and

A. Hume & Davison, Stray Feathers, vi, 1878.
B. Müller, Die Ornithologie der Insel Salanga, 1882.
C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.
D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.
F. Robinson and Kloss, Ibis, 1910-11.
G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.
H. Robinson, Journ. F. M. S. Museums, v, 1915.

have been named *Corydon sumatranus brunescens* (Hartert, Bull. Brit. Orn. Club, xxxvii, 1916, p. 4). Fairly common in Peninsular Siam, extending northwards to Chiangmai and the Karen Hills.

Fresh skins have the concealed back spot almost invariably fiery orange or scarlet, which in many cases fades to apricot or pinkish yellow.

300. *Serilophus lunatus lunatus* (Gould).

Eurypaimus lunatus, Gould, P. Z. S. 1833, p. 133 (Rangoon).

Serilophus lunatus, A., p. 89 (Nwalabo); C. i, p. 424; Salvad. Ann.

Mus. Civ. Gen. (2) v, 1888, p. 574 (Tenasserim); id. op. cit. (2) vii, 1889, p. 383 (Karen).

Serilophus lunatus lunatus, M., p. 419 (partim: Patiye and S. E. Siam).

4 ♂, 6 ♀. Tapli, Pakehan Estuary, Peninsular Siam, 1-7 March 1919 (Nos. 4338, 4361-5, 4374, 4380, 4480-1).

♂. Tasan, Chumporn, Peninsular Siam, 27 March 1919 (No. 4909).

"Iris greyish green or dull green, orbits greenish yellow; bill pale blue, tomia whitish, gape and base deep chrome; feet oil-green, claws pale blue."

Total length ♂, 168, 164, 177, 170, -; ♀, 176, 168, 170, 172, 180, 165; wing ♂, 81, 87, 87, 87, -; ♀, 87, 85, 82, 85, 86, 85; tail ♂, 73, 67, 68, 65, -; ♀, 70, 68, 68, 68, 65, 70; tarsus ♂, 20, 18, 18, 17, -; ♀, 17, 18, 21, 20, 18, 18; bill from gape ♂, 21, 22.5, 22, 22, -; ♀, 21.5, 21.5, 23, 23, 23, 23 mm.

This bird was found to be very abundant in dry bamboo jungle at Tapli, flying in flocks of five or six individuals and, as Davison notes, not at all easy to alarm. At Tasan in deeper, more evergreen, jungle it was much rarer, and at other places we did not come across it at all.

Davison did not collect it on the Pakehan, nor did Oates's collectors, so that the present series is a considerable extension of range for the form.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part). Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. I. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

301. *Serilophus lunatus stolidus* Rob. & Kloss.

Serilophus lunatus stolidus, Robinson and Kloss, Bull. B. O. C. xl, 1919, p. 16 (Khao Nawng, Bandon).

Serilophus lunatus, H., p. 97 (Khao Nawng, Bandon).

Serilophus lunatus lunatus, M., p. 419 (partim : Tung Song).

This form, based on five examples from the central part of Peninsular Siam, differs from the more northern race (*antea*) in having deeper coloured inner secondaries and tertiaries and less fulvous ear-coverts. From *S. l. rothschildi*, of the Federated Malay States, which may also occur in the south, it is separated by the more fulvous, less grey, crown and ear-coverts and paler rump and secondaries.

302. *Cymborhynchus macrorhynchus malaccensis* Salvad.

Cymborhynchus malaccensis, Salvad. Atti. R. Acad. Tor. ix, 1874, p. 425 (Malacca); F., p. 50 (Trang); H., p. 96 (Bandon).

Cymborhynchus macrorhynchus, A., pp. 92-5 (Tavoy to Malewoon); G. i, p. 428; B., p. 42 (Tongkah or Puket); D., p. 68 (Patani); G., pp. 39, 149 (Rajburi and Petchaburi).

Cymborhynchus macrorhynchus lemniscatus, L., p. 87 (Hat Sanuk).

Cymborhynchus macrorhynchus malaccensis, L., p. 103 (Ghirbi); M., p. 419 (Tung Song).

2 ♀. Tung Pran, Takuatung, Peninsular Siam, 14 February 1919 (Nos. 4013-4).

♂, ♀. Renong river, Peninsular Siam, 22 February 1919 (Nos. 4163-4).

♀. Mamoh, Pakchan Estuary, Peninsular Siam, 27 February 1919 (No. 4292).

3 ♂. Tapli, Pakchan Estuary, Peninsular Siam, 2-9 March 1919 (Nos. 4366, 4446, 4527).

♂, ♀. Tasan, Chumporn, Peninsular Siam, 21-22 March 1919 (Nos. 4733, 4783).

♂, ♀. Hat Sanuk, Rajburi, Peninsular Siam, 15 April 1919 (Nos. 5324-5).

"Iris emerald; bill robin's-egg blue, lower mandible mostly chrome; feet purplish blue."

A. Hume & Davison, Stray Feathers, vi, 1878.

B. Müller, Die Ornith. der Insel Salanga, 1882.

C. Oates, Birds Brit. Burmah, Vols. i & ii, 1883.

D. Bonhote, P. Z. S. 1901, Vol. i.

E. O. Grant, Fasciculi Malayenses, iii (Birds), 1905.

F. Robinson and Kloss, Ibis, 1910-11.

G. Gairdner, Journ. N. H. Soc. Siam, i, 1915.

H. Robinson, Journ. P. M. S. Museums, v, 1915.

Total length ♂, 208 (app.), 225, 213, 216, 225, 218; ♀, 213, 220, 217, 208, 212, 223; wing ♂, 97, 98, 100, 96, 99, 100; ♀, 101, 96, 96, 97, 98, 99; tail ♂, 84 (app.), 87, 85, 93, 93, 90; ♀, 93, 95, 88, 93, 87, 90; tarsus ♂, 23, 26, 23, 24, 24, 24; ♀, 24, 24, 22.5, 24, 25, 22; bill from gape ♂, 31, 29, 30, 29, 30, 33(?); ♀, 29, 28, 31, 28.5, 29, 29 mm.

Consistently common in every suitable locality visited in Peninsular Siam, affecting chiefly bamboo jungle near water; not as a rule found near the sea or in the mangrove zone.

The races of this Broadbill have recently been discussed *ad nauseam*, but after all little has been elicited that has not appeared in Hume and Davison's classic paper. Broadly speaking it may be stated that there is a progressive increase in the amount of white on the tail as we proceed northwards. Bornean birds have least, and to this locality the name *Cymborhynchus macrorhynchus macrorhynchus* is attached, though it is by no means certain that it properly applies: West Sumatran birds are next; and if distinct, will have to be called *C. m. lemniscatus* Raffles, while the continental birds south of Araean are *C. m. malaccensis*. The present series have white on the four outer pairs of tail feathers; one male from Tasan has it on five, one female from Tasan on three pairs only.

I. Gyldenstolpe, Kungl. Sv. Vet. Akad. Handl. 56, No. 2, 1916.

J. Robinson, Journ. F. M. S. Mus. vii, 1917.

K. Kloss, *Ibis*, 1918.

L. Robinson and Kloss, Journ. N. H. Soc. Siam, iii, 1919.

M. Baker, Journ. N. H. Soc. Siam, iii, 1919.

(first part).

Baker, Journ. N. H. Soc. Siam, iii, 1919.

(second part).

M. 1. Baker, Journ. N. H. Soc. Siam, iv, 1920.

(third part).

ADDENDA AND CORRIGENDA, VOL. V. PAGES 1-207.

- Page 2, line 2 from bottom. *For the third word read*:—British.
- Page 3. Hume's three papers on "The Birds of the Western Half of the Malay Peninsula (Stray Feathers, viii, 1879, pp. 37-72, 151-163; op. cit. ix, 1880, pp. 107-132) have not been mentioned in the synonymy as fully as they should have been: they contain references to many birds from Peninsular Siam.
- Page 16, bracket 15. *For Tropicoperdix in the last two entries read*:—*Tropicoperdix*.
- Page 17, No. 1. The Francolin of Southern Indo-China will possibly have to be known, on account of smaller size than the Chinese bird, as *Francolinus pintadeanus phayrei* Blyth (Journ. Asiat. Soc. Bengal, xii, 1843, p. 1011; id. op. cit. xxiv, 1855, p. 480. Pegu). See Bangs, Bull. Amer. Mus. Nat. Hist. xlv, 1921, p. 576.
- Do. No. 2. *Read*:—*Rhizothera longirostris longirostris* (Temm.).
- Page 20, line 2. *For p. 25 read*:—p. 28 (Penang).
The type of *Phasianus castaneus* Gray was, therefore, almost certainly an imported bird.
- Page 22, line 1. *For 532 read 632*.
- Page 23, No. 15. If the bird of the Malay Peninsula differs from other races, with which we have not been able to compare it, it will be known as:—
Turnix pugnax atrogularis (Eyton).
Hemipodius atrogularis, Eyton, P. Z. S. 1839, p. 107. Malay Peninsula.
- Page 29, No. 20. *Treron bisincta domvillii* of Hainan has wings (*vide* Hartert in litt.), ♂♂ 155, 162, 163, 163, 164, 165; ♀♀ 151, 152, 155 mm.
We associate birds from E. and S. E. Siam with the small Javanese race, *T. b. javana* Rob. and Kloss (Journ. Fed. Malay States Mus. xi, 1923, p. 53).
- Page 31, No. 23. Mr. W. J. F. Williamson has a pair of *Treron olax* obtained at Naihoot, Langsuan, thus considerably increasing the northern range of the species in the Peninsula.

Page 44. No. 43. Read:—**Porphyrio calvus viridis** Begbie.

Porphyrio viridis, Begbie, The Malay Peninsula, 1834, p. 515 (Malacca).

Elliot's name for Saigon and Bangkok birds, *P. edwardsi*, will have to rank as a synonym of *P. viridis*, an overlooked name which antedates it by many years. Hume determined a Selangor specimen as "not *calvus*, but Elliot's new Siamese species." We now have specimens from the Malay States which we find to be the same as birds from Chainat, near Bangkok. All these differ from typical *calvus* of Java and Sumatra by having a considerable amount of grey on the head and by larger size. A large series of *P. c. calvus* has wings 210–230 mm: the wings of continental specimens known to us measure from 240 to 275 mm.

Page 45. For **Podicepedidae** read:—**Podicipidae**.

Do. No. 44. Read:—**Podiceps ruficollis philippensis** (Bonn.)

Colymbus fluviatilis Tunstall, is antedated by *C. ruficollis* Pallas.

Page 47, bracket 10. Read:—

Large, wing over 11 inches	..	..	..	11
Medium, wing between 8 and 11 inches	..	..	..	12
Small, wing less than 8 inches	..	..	..	15

Do. bracket 15.

For *S. sinensis* read:—*S. albifrons sinensis*.

„ *S. minuta* „ *S. a. albifrons*.

„ *S. saundersi* „ *S. a. saundersi*.

Page 48, No. 46. An earlier name for this tern is **Hydrochelidon leucopareia** (Temm.).

Sterna leucopareia, Temm., Man. d' Orn. ii, 1820, p. 746 (Hungary).

Birds from Java, India and China have received the names of *javanica* Horsf., *indica* Stephens, and *swinhoei* Mathews, respectively, but we are not in a position to determine Siamese birds subspecifically. Mathews considers them to be *H. l. javanica* (Horsf.).

Do. No. 47. Horsfield named a Javanese specimen *Sterna grisea*, and Mathews thinks that this name should be used for the birds of S. E. Asia. Hartert only recognises the typical form.

ADDENDA AND CORRIGENDA (SECOND LIST).

Page 211, line 2. For *nilocita* read:—*nilotica*.

Do., line 5 from bottom. *Before* Scopoli insert:—*Sterna pileata*.

Page 44, No. 43. Read:—*Porphyrio calvus viridis* Begbie.

Porphyrio viridis, Begbie, The Malay Peninsula, 1834, p. 515 (Malacca).

Elliot's name for Saigon and Bangkok birds, *P. edwardsi*, will have to rank as a synonym of *P. viridis*, an overlooked name which antedates it by many years. Hume determined a Selangor specimen as "not *calvus*, but Elliot's new Siamese species." We now have specimens from the Malay States which we find to be the same as birds from Chainat, near Bangkok. All these differ from typical *calvus* of Java and Sumatra by having a considerable amount of grey on the head and by larger size. A large series of *P. c. calvus* has wings 210–230 mm: the wings of continental specimens known to us measure from 240 to 275 mm.

Page 48, No. 40. An earlier name for this form is—*Hydrochelidon leucopareia* (Temm.).

Sterna leucopareia, Temm., Man. d' Orn. ii, 1820, p. 746 (Hungary).

Birds from Java, India and China have received the names of *javanica* Horsf., *indica* Stephens, and *swinhoei* Mathews, respectively, but we are not in a position to determine Siamese birds subspecifically. Mathews considers them to be *H. l. javanica* (Horsf.).

Do. No. 47. Horsfield named a Javanese specimen *Sterna grisea*, and Mathews thinks that this name should be used for the birds of S. E. Asia. Hartert only recognises the typical form.

Page 49, No. 48. Read:—*Hydropregne caspia caspia* (Pall.).

Do. No. 49. Read:—*Geochelidon nilocita* (Gm.).

Sterna nilotica, Gmelin, Syst. Nat. ii, 1789, p. 606 (Egypt).

Some authors regard the form of S. E. Asia as distinct and call it *G. n. affinis* (Horsf.). Type locality Java.

Page 50. For *Sterna media* read:—*Sterna bengalensis bengalensis* Less.

Sterna media Horsf. is preoccupied by *Sterna media* Vieill., and this species must therefore be known as *Sterna bengalensis* Less. (Traité d' Orn. 1831, p. 621. Indian Coasts). Local birds appear to belong to the typical race and are, therefore, *S. b. bengalensis*.

Do. No. 52. Read:—*Sterna hirundo* Linn.

Sterna hirundo, Linn., Syst. Nat. i, 1758, p. 137 (Europe).

This name considerably antedates *Sterna fluvialis* Nauman.

The Asiatic form is *S. hirundo tibetana*, but the European race, *S. h. hirundo*, is reported to occur in the Malay Peninsula in winter. As noted, the material we have examined is inadequate for subspecific determination.

Page 52, No. 55. Read:—*Sterna albifrons sinensis* Gm.

Page 53. For *Sterna minuta* read:—*Sterna albifrons albifrons* Pall.

Sterna albifrons, Pallas, Vroeg's Cat. Vers. Vog. Adumbr. 1764, p. 6 (Holland).

The name *Sterna minuta* is antedated by the one above given.

Do. For *Sterna saundersi* read:—*Sterna albifrons saundersi* Hume.

Do. For *Anous stolidus* (Linn.) read:—*Anous stolidus pileatus* (Scop.).

Scopoli, Del. Faun. & Flor. Insubr. ii, 1776, p. 92 (Philippines).

Eastern Asiatic birds differ from the typical Atlantic form.

Page 54, bracket 12. For *Squatarola helvetica* read:—*Squatarola s. hypomelus*.

Page 54, bracket 16. For *Aegialites geoffroyi* read :—*Aegialites leschenaulti*.

Page 55, bracket 23. For *Macrorhamphus g. taczanowskii* read :—*Macrorhamphus g. semipalmatus*.

Do. bracket 24. Reverse the names (the bird with the tail not barred is *L. l. melanuroides*), and for *L. lapponica novae-zelandiae* read :—*L. lapponica baueri*.

Do. bracket 30. For *Totanus calidris* read :—*Totanus t. eurhinus*; and for *Totanus fuscus* read :—*Totanus erythropus*.

Do. bracket 37. Delete the numbers 9 and 7.

Do. bracket 39. For *Ancylochilus subarquatus* read :—*Ancylochilus ferrugineus*; and for *Limicola platyrhyncha* read :—*Limicola falcinellus sibirica*.

Page 56, bracket 40. For *Rostratula capensis* read :—*Rostratula b. benghalensis*.

Page 59, No. 61. Read :—*Arenaria interpres interpres* (Linn.).

Page 60, No. 64. Read :—*Squatarola squatarola hypomelus* (Pall.).
Charadrius hypomelus, Pallas, Reis. Russ. Re'ch. iii, 1766, p. 699 (Siberia).

Tringa squatarola Linn. antedates *Tringa helvetica* Linn., and eastern birds differ from the typical western form.

Do. No. 65. Read :—*Charadrius apricarius fulvus* Gm.

Do. No. 66. Read :—*Aegialites leschenaulti* (Less.).

Charadrius leschenaulti, Lesson, Dict. Sci. Nat. xlii, 1826, p. 36 (Fondicherry).

This name antedates *geoffroyi* (Wagler).

Page 61, No. 67. Read :—*Aegialites mongolus mongolus* (Pall.).

For *Ae. pyrrhthorax* (in text) read :—*Ae. mongolus atrifrons* (Wagler)—[an earlier name].

Page 64, No. 73. Read :—*Macrorhamphus griseus semipalmatus* Jerdon.

Macrorhamphus semipalmatus, Jerdon in Blyth, Journ. Asiat. Soc. Bengal, xvii, 1848, p. 252 (Calcutta).

The name antedates *taczanowskii*.

Page 64, No. 74. For *Limosa lapponica novae-zelandiae* Gray read:—*Limosa lapponica baueri* Nauman.

Limosa baueri, Nauman, Vog. Deutschl. viii, 1836, p. 429 (New Holland ; i.e., Victoria).

This name has priority over *novae-zelandiae*.

Page 65. *Totanus ochropus* becomes No. 75 A. We have recently seen specimens in Mr. Williamson's collection from Nong Kae, S. W. Siam.

Do. No. 77. Read:—*Totanus totanus eurhinus* Oberh.

Oberholser, Proc. U. S. Nat. Mus. xxii, 1900, p. 217 (Ladak).

Scolopax totanus Linn. antedates *Scolopax calidris* Linn., while the Eastern Asiatic bird differs from the typical western one.

Page 66. No. 78. Read:—*Totanus erythropus* (Pall.).

Scolopax erythropus, Pallas, Adumbr. Vroeg's Cat. d' Ois. Quad. & d' Ins., 1764, p. 6 (Holland).

This name has priority over *fuscus*.

Page 68, No. 84. For *Erobia* in the synonymy read:—*Erolia*.

Do. *Limonites temmincki* becomes No. 84 A. A male was obtained at Koh Lak, S. W. Siam, in December 1921 by Mr. W. J. F. Williamson.

Do. No. 86. Read:—*Ancylochilus ferrugineus* (Brünn.).

Tringa ferruginea, Brünnich, Orn. Bor. 1764, p. 53 (Iceland).

This name has priority over *subarquatus*.

Page 69, No. 87. Read:—*Limicola falcinella sibirica* (Dresser).

Limicola sibirica, Dresser, P. Z. S, 1876, p. 674 (Siberia).

S. Falcinellus Pontop. antedates *T. platyrincha* Temm., while eastern birds differ from the typical western form.

Do. No. 88. Read:—*Rostratula benghalensis benghalensis* (Linn.).

Rallus benghalensis, Linn. Syst. Nat. i, 1758, p. 153 (Asia).

An older name for the species.

Page 70, No. 90. For *sthenura* read:—*stenura*.

Page 78, No. 104. Tavoy birds may be the subspecies *H. a. modesta* (Gray. *Ardea modesta*, Zool. Misc. 1831, p. 19. India).

Do. No. 105. Read:—*Mesophoyx intermedia intermedia* (Wagl.).

Page 79, No. 107. Read:—*Demiegretta sacra sacra* (Gm.).

Do. do., line 2 of synonymy. For I. read:—A.

Do. For *Nycticorax nycticorax* read:—*Nycticorax nycticorax nycticorax* (Linn.).

Do. No. 108. Insert as first item in the synonymy:—

Ardea melanolopha, Raffles, Trans. Linn. Soc. xiii, 1822, p. 326 (Sumatra).

Page 80, No. 109. Read:—*Butorides striatus javanicus* (Horsf.).

Do. No. 112. Read:—*Bubulcus ibis coromandus* (Bodd.).

Page 81, No. 113. Read:—*Ardetta sinensis sinensis* (Gm.).

Page 85, For *Plotus melanogaster* read:—*Plotus rufus melanogaster* (Penn.).

Do. No. 124. Read:—*Phalacrocorax carbo* (Linn.).

Tickell's name *Carbo albiventer* is preoccupied and the Siamese bird is probably *P. c. sinensis* (*Pelecanus sinensis* Shaw and Nodder, Nat. Misc. xiii, 1801, pl. 529 and text. China), with which, according to Ticehurst (*Ibis*, 1923, p. 458) *P. c. indicus* Mathews is synonymous.

Page 86. For *Pelecanus roseus* read:—*Pelecanus onocrotalus roseus* Gm.

Page 89, bracket 6. Read:—*Cerchneis tinnunculus*.

Page 90, bracket 17. Insert no before scutellae.

Do. bracket 18. For $\frac{1}{2}$ in both lines read:— $1\frac{1}{2}$

Page 91, No. 128. Read:—*Baza leuphotes* (Dumont).

Falco leuphotes, Dumont, Dict. Sci. Nat. xvii. 1820, p. 217 (Pondicherry).

On further consideration of our series of fourteen specimens, southwards from the Isthmus of Kra in the Malay Peninsula, we find ourselves in agreement with Swann's view as to *B. l. burmana* being only a synonym of *B. leuphotes* (Syn. Accipitres, ed. 2, 1922, p. 167). Only two of our specimens have chestnut on the scapulars and these also have chestnut breast-bands, the individual having most chestnut on the scapulars having the brightest chestnut breast and being of small size. The remaining twelve have scapulars black and white: two of them have pure black breast-bands;

in the rest the breast-band varies from chestnut-black to blackish chestnut. Swann seems correct in stating that *B. l. burmana* has been arrived at through comparing adult Burmese birds with immature Indian ones.

Page 92, No. 129 Read:—*Baza jerdoni jerdoni* (Blyth).

No. 131. Read:—*Cerchneis tinnunculus* subsp.

It is probable that all the specimens mentioned are examples of *Cerchneis tinnunculus dorriesi*, the Siberian Kestrel, which Swann states has a much longer tail than in other forms (♂ 172–194; ♀ 178–200 mm.).

Other races to be considered in connection with S. W. and Peninsular Siam, having regard to the distribution given by Swann (Syn. Accip. ed. 2, p. 216), are *C. t. interstinctus* McClell. (of which *saturatus* Blyth is a synonym), the Assamese Kestrel, visiting the Malay Peninsula in winter; and perhaps *C. t. japonicus* (Temm. and Schleg.), the Japanese Kestrel, known in winter from Hainan, the Philippines and Borneo.

Page 93, line 4. For 445 read:—44.5.

Page 94, No. 134. Add to the synonymy:—

Pernis brachypterus, Hume, Stray Feathers, ix, 1880, p. 122 (Malacca).

Pernis tweeddalei, Hume, tom. cit., p. 446; Gurney, tom. cit., p. 446, Hume, op. cit. x, 1887, p. 513 and plate (Malacca).

Pernis apivorus orientalis, Tacz., the Siberian form of the Crestless Honey Buzzard, may occur, as it travels south as far as the Sunda Islands in winter.

The common bird in the Malay Peninsula is undoubtedly *P. pt. ptilorhynchus*; but it may be visited in winter by the North Indian race, *P. pt. ruficollis*, and the Siberian form, *P. a. orientalis*.

Page 99, No. 143, line 2. For (Java) read:—(Sumatra, *fide* Oberholser).

Do. Do. Add to the synonymy:—

Spilornis cheela malayensis, Swann, Syn. List. Accipitr, 1920, p. 83 (Pahang).

It may be just possible to maintain Javanese birds as *S. c. bido* (Horsf.) on account of very slightly darker colour, but this character is not constant and, as we have stated, Javanese examples can be matched by specimens from other parts of Malaysia.

Page 99, Add:—

143. A. ***Spilornis cheela rutherfordi*** Swinh.

Spilornis rutherfordi, Swinhoe, Ibis, 1870, p. 85 (Hainan); A., p. 14 (Tavoy); C. ii, p. 194 (*partim*, Tenasserim and Siam).

Spilornis cheela, G., p. 151 (Ratburi or Petchaburi).

Spilornis bacha, I., p. 128 (Huey Sai near Koh Lak).

Spilornis cheela floweri, Swann, Syn. List. Accipitr., 1920, p. 81 (Tahkamen, Central Siam).

♂. Koh Lak, S. W. Siam, 6 April 1919 (No. 5119).

"Iris chrome; bill grey, tip black, cere and base yellow; feet greenish grey."

Total length 610, wing 425, tail 270, tarsus 100, bill from gape 45 mm.

The Koh Lak example agrees with birds from Cochin-China.

This race only differs from *S. c. bassus* in being larger: there are no colour distinctions.

Page 101, No. 148. Read:—***Milvus lineatus*** (Gray).

Haliaetus lineatus, Gray, Hardwicke's Ill. Ind. Zool. i, 1832, p. 1, pl. 11 (China).

This is an earlier name for *M. melanotis*.

Page 105. ***Accipiter nisus*** subsp. *For* p. 22, *in synonymy*, read, p. 29.

Page 108, No. 159. Read:—***Tyto alba javanica*** (Gm.).

Page 109, No. 163. Read:—***Ketupa ketupu ketupu*** (Horsf.).

Page 111, No. 166. Read:—***Otus luciae siamensis*** Rob. and Kloss, Journ. Fed. Malay States Mus. x, 1922 p. 261 (Khao Nong, Bandon, 3500 ft: also from Khao Luang, Nakon Sri Tamarat, 5000 ft.).

Page 116, No. 178. Read:—***Palaeornis cyanocephalus bengalensis*** (Forst.).

Psittacus bengalensis, Forst., Ind. Zool. 1781, p. 40 (Bengal).

Forster's name has precedence of Boddaert's.

Page 121, bracket 2. For *Ceyx l. tridactylus* read :—*Ceyx e. erithaca*.

Page 125, No. 191. For *Ceyx tridactylus tridactylus* (Pall.) read :—

***Ceyx erithaca erithaca* (Linn.).**

Alcedo erithaca, Linn., Syst. Nat. i, 1758, p. 115 (Bengal).

Laubmann has shown (Orn. Monatsb. xxxi, 1923, p. 89) that this species must be known by Linneus's name, which is eleven years earlier than that of Pallas.

Page 143. For **Apidae** read :—**Micropodidae**.

Page 144, No. 223. For **Apus** read :—**Micropus**.

Page 145, No. 224. For **Apus** read :—**Micropus**.

Page 149, bracket 4. For *Cuculus canorus bakeri* read :—*Cuculus optatus*.

Page 152. For No. 240 read :—

***Cuculus optatus* Gould.**

Cuculus optatus, Gould, P. Z. S. 1845, p. 18 (North Australia); Hartert, Vog. palaarkt. Fauna, 1912, p. 949 (Malay Peninsula).

(Specimen and details as recorded).

The advent of a second example of this species from Sumatra (♂, wing 198 mm.) has caused us to reconsider our determination; and Dr. Hartert who has examined the specimens agrees with us that they are *C. optatus*. Though very like *C. canorus* this species is too small to belong to either of the two Asiatic local races, *C. c. bakeri* and *C. c. telephonus*. It has nothing to do with *C. micropterus*, etc.

Page 154, No. 247. We should have stated that the wing lengths of *E. s. scolopacea* given by Hartert are those of males only: thus our males have wings only 1 mm. more than Hartert's maximum. Without doubt, however, they are properly determined as *E. s. malayana*, for in a series of both sexes from Central and Eastern Siam, the wings range from 198 to 222 mm.; and with the exception of three specimens (wings 190, 196, 196) a large series of Malay Peninsula males have wings 197–212. mm.

Page 159, bracket 7. *Read at end of second line :—.....8.*

Page 166, No. 262, line 1. For *faiostratus faiostratus* read :—**faiostriatus faiostriatus.**

Page 180, line 4. For *micropterus* read :—*microterus.*

Page 200, No. 294, last word of text. *For everlap read :—overlap.*

THE
JOURNAL
OF THE
Natural History Society of Siam.

Volume V.

BANGKOK.

Number 3.

THE BIRDS OF SOUTH-WEST AND PENINSULAR SIAM.

BY HERBERT C. ROBINSON, C.M.Z.S., M.B.O.U.,

AND

CECIL BODEN KLOSS, F.Z.S., M.B.O.U..

(Continued from page 218).

[The publication of this paper has been much postponed by printing difficulties. The whole of it was completed in 1921, but the delay has enabled us to include the localities of a collection of birds obtained in Nakon Sri Tamarat in the early months of 1922 (for a nominal list of the species, vide Journal of the Federated Malay States Museums, xi, April 1923, part 1, pp. 58-63) and to give references to a few recent publications].

PASSERIFORMES.

PITTIDAE.

PITTAS OR GROUND-THRUSHES.

1	{ Size larger, wing over 5.5 inches	<i>Pitta c. caerulea.</i>	
	{ Size smaller, wing less than 5 inches .. .. .	.. .. .	2
2	{ Lower abdomen red .. .. .	.. .. .	3
	{ Lower abdomen not red .. .. .	.. .. .	6
3	{ Crown red	<i>P. granatina coccinea.</i>	
	{ Crown brown .. .. .	.. .. .	4
4	{ Breast and flanks green	<i>P. sordida cucullata.</i>	
	{ Breast and flanks pale brown .. .. .	.. .. .	5
5	{ Coronal stripe obsolete, bill from gape more than 1.4 inches	<i>P. megarhyncha.</i>	
	{ A marked black coronal stripe, bill from gape less than 1.25 inches	<i>P. cyanoptera.</i>	
6	{ Occipito-nuchal area not red	<i>Eucichla gurneyi.</i>	
	{ Occipito-nuchal area red or flame colour .. .. .	.. .. .	7
7	{ No yellow on head and neck, cheeks and earcoverts fulvous	<i>Pitta cyanea</i> ..	
	{ With yellow on head and neck, cheeks and earcoverts black	<i>Eucichla cyanura irena.</i>	

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